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In This Issue . . .

U.S. sugar policy . . . Mexican border bottlenecks . . . E-commerce on the farm . . . Manure management

On the Upswing: Online Buying & Selling by Farmers

Increasing numbers of farmers and ranchers are doing business over the Internet. Over 600,000 U.S. farms and ranches accessed the Internet in 1999, with 15 percent conducting e-commerce transactions, based on new data from USDA. Of these, over 40 percent reported purchasing crop inputs online in 1999, about one-third reported purchasing livestock inputs, and a quarter reported selling livestock.

U.S. Soybean Stocks to Build

USDA forecasts a record U.S. soybean crop in 2000, based on record-high acreage and relatively high yields. Despite the liberal supply expansion, U.S. soybean exports in 2000/01 are projected to rise only slightly, primarily because of larger harvests in China (a major importer) and in Brazil and Argentina (major export competitors), as well as shrinking imports by the European Union. With U.S. soybean demand expected to lag supply growth, ending stocks in 2000/01 are projected to swell, and the U.S. farm price of soybeans is expected to average $3.90–$4.80 per bushel in 2000/01, a drop from $4.65 in 1999/2000. Thus marketing loan benefits will continue to be important for soybean producers.

U.S. Sugar Policy: Sticky Issues

Rising domestic sugar production as well as prospects for higher imports are testing the government's ability to prevent sugar prices from dipping below support levels. In June, USDA entered the sugar market for the first time since 1986, purchasing 132,000 tons of refined sugar at a cost of $54 million. With this move, USDA projected savings of as much as $6 million in administrative costs that the government might otherwise incur from expected sugar program loan forfeitures. With domestic sugar production plus imports exceeding domestic consumption in the foreseeable future, it will be difficult to keep prices above support levels without reducing output through a domestic supply control program or incurring large Treasury costs. On August 17, USDA announced a 2-week signup period for the Sugar Payment-In-Kind (PIK) Program, which offers sugar beet producers the option of diverting a portion of this year's crop from production in exchange for government-held sugar.

U.S.-Mexico Trade Faces Border Bottlenecks

The high volume of traffic at U.S.-Mexico border crossings reflects the dynamic and fast-growing trade relationship between the U.S. and Mexico. But rising agricultural and other trade between the two countries has led to congestion and, in some instances, to costly delays at the border. A major source of delay is a multi-step process for transferring cargo, because long-haul trucks destined for the interior of the U.S. or Mexico are not allowed to travel beyond a border zone. A broad spectrum of incremental measures—e.g., enhancement of physical facilities/infrastructure at crossing points and use of new technologies for checking cargo—is advancing the efficiency of the U.S.-Mexico transportation system. Freer truck access and the upgrading of Mexico's rail system are key factors in future growth in U.S.-Mexico food and agricultural trade.

Confined Animal Production Poses Manure Management Problems

Livestock and poultry manure applied to farmland provide a valuable source of organic nutrients, but nitrogen and phosphorus from manure in excess of the farm's crop requirements can compromise water quality. Many confined animal operations are unable to utilize all manure nutrients produced on the farm—i.e., apply the animal waste to crops on land under their control.

For areas with excess manure, initiatives to encourage land application on other farms or to provide incentives for alternative manure treatment strategies may be necessary. USDA's Environmental Quality Incentives Program (EQIP), for example, provides technical, educational, and financial assistance to farmers and ranchers for adopting practices that protect or enhance environmental quality.

Environmental Regulation & Location of Hog Production

Increasing concentration of hog production and manure waste in certain areas of the U.S. has heightened interest in the potential links between stringency of environmental regulation and location of animal production. Policies regulating environmental pollution from confined animal farming may vary geographically, partly because Federal water policy laws allow states to have authority and flexibility to design and implement their own environmental laws.

Costs associated with environmental regulation compliance may be a consideration in choosing a business location. Producers may respond to existing or impending costs of regulation by exiting the industry or changing the scale and/or location of production. Hog production has expanded in recent years in areas in the South and in nontraditional areas of the West, prompting speculation that large operations moved to those areas because of possibly less stringent environmental regulations.

Briefs

Field Crops

Harvested Durum Area To Be Largest Since 1982

The harvested area of durum wheat—used mainly for pasta production—is forecast at 4 million acres in 2000, up 12 percent from 1999 and the largest since 1982. Plantings are unchanged compared with a year earlier, but abandonment rates should return to normal after increasing sharply last year due to late maturation of the crop and unusually cold and wet conditions at harvest.

In North Dakota, the leading durum state with almost 82 percent of harvested area, planted area is 12 percent above farmer intentions published in USDA's March 31 *Prospective Plantings* report, primarily reflecting favorable weather at planting time and relatively strong futures prices for durum. Acres planted to all major field crops in North Dakota were 2.4 million above planting intentions (including a 900,000 acre gain for "other" spring wheat). Durum acreage intended for harvest is forecast at 3.25 million acres, 8 percent above last year.

In Montana, the second-ranked durum producing state, producers followed through on their large 2000 planting intentions by seeding 53 percent more acres to durum than in 1999. The forecast harvested area in Montana is the largest since 1957 and the third largest on record. Drought conditions in Montana led producers to plant 1.2 million fewer acres than intended to major crops, primarily other spring wheat and barley. Most of this land will be in summer fallow this year. The more favorable price outlook prior to planting for durum relative to other spring wheat likely convinced Montana producers to stick with earlier intentions. Soil moisture conditions have been generally favorable in northeast Montana where durum is grown.

The hike in harvested U.S. durum area, combined with a larger harvested area of other spring wheat (up 2 percent from last year), will reverse the downward trend in harvested wheat area that began in 1997. Durum and other spring wheat planting progressed much faster than normal in the northern Plains in 2000 because of favorable weather during planting.

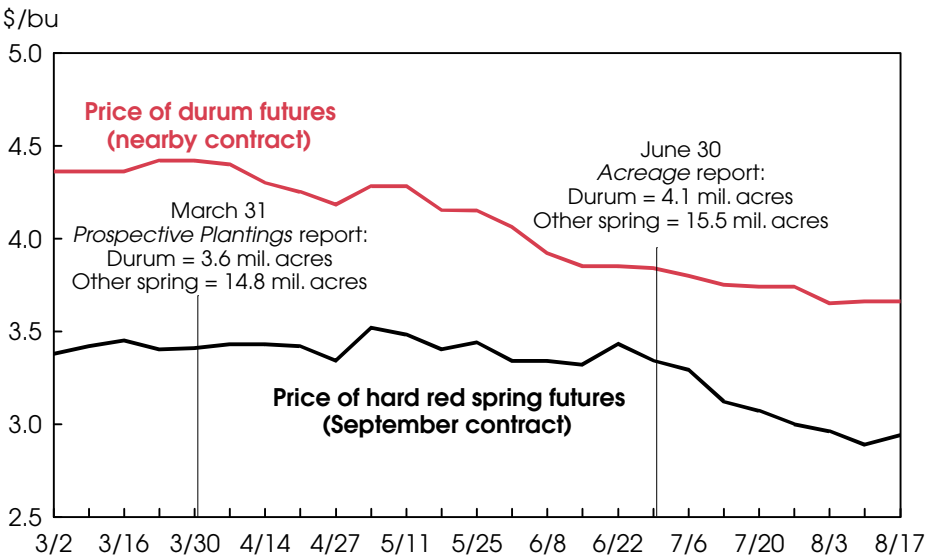
USDA's August 1 forecast indicates that U.S. farmers will harvest 115 million bushels of durum in 2000, up 16 million from the weather-plagued 1999 crop. Higher forecast yield (28.9 bushels per harvested acre vs. 27.7 bushels last year) and greater harvested area will push up production this year (however, the yield forecast for North Dakota is down 4 bushels per acre since early July). With beginning stocks on June 1 estimated at 50 million bushels and imports (grain and products) projected at 30 million, durum supply is forecast at 195 million bushels in 2000/01, up 13 million from last year.

While supplies expand, total use is projected to decline 2 million bushels to 131 million in 2000/01. This includes a projected 4-million-bushel decline in exports. Ending stocks are forecast up 14 million bushels to 64 million, the highest since 1987/88.

Larger supplies and weak export demand will keep downward pressure on farm prices for durum in 2000/01. With few alternative uses, large supplies and a huge crop expected in Canada will limit the price premium producers usually receive for durum relative to other spring wheat.

In 1999/2000, large supplies and significant quality problems drove the average *farm price* for durum to a 9-year low and 14 cents per bushel below the average for other spring wheat. The last time the farm price for durum was at a discount to other spring wheat was in the 1992/93 marketing year. In contrast, high-quality U.S. No. 1 hard amber durum at the Minneapolis *cash market* in 1999/2000 commanded an average premium of 57 cents per bushel over U.S. No. 1 dark northern spring wheat (14 percent protein). The cash market premium for durum is expected to narrow in 2000/01 because large durum crops are forecast for the U.S., Canada, and the European Union (a major importer and exporter in most years). Canada's durum production is forecast up 41 percent from last year. The EU crop is forecast up 21 percent. Persistent drought is cutting the 2000 durum crop in the key North African market—Algeria, Morocco, Tunisia, and Libya—which usually accounts for over

Prospects for Larger Durum Acreage in 2000 Keep Pressure on Prices



Weekly settlement prices (Thursdays). Planted acreage.

Economic Research Service, USDA

40 percent of world imports. In the North African region, durum is consumed primarily as couscous, a traditional durum-semolina-based dish. U.S. exports are not expected to benefit significantly from the region's production shortfall since Canada and the EU are primary suppliers to the region. Canada is expected to be a major competitor in other key import markets, including the EU, Japan, and Venezuela. AO

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Livestock

Hog Producers Plan Modest Expansion

Viewing prospects for favorable returns, hog producers indicate they intend to begin rebuilding breeding herds, according to the USDA's June *Hogs and Pigs* report. After signaling a 2 percent decline for June-August 2000 compared with a year ago, producers have reversed direction and are planning to have 1 percent more sows farrow (produce litters) in September-November than a year ago. Hog producers' returns moved well above the economic breakeven point (receipts less costs) in first-half 2000, as prices rallied into the low $50's per cwt and feed costs remained the lowest in several years.

Producers have been reducing herds due to poor returns in late 1998 and 1999. The June 1 inventory of all hogs and pigs totaled 59.4 million head, and the 6.23 million breeding hogs in that total was a 4-percent drop from last year.

The additional farrowings, along with a rising number of pigs per litter, would increase the pig crop 1-2 percent for September 2000-February 2001 over the same period a year earlier. Pork production, in turn, is forecast up about 1 percent in calendar 2001, with the first quarterly year-over-year rise in March-May 2001 since third-quarter 1999. The hog production cycle is 10 months—4 from conception to birth, 1 from birth to weaning, and 5 from weaning until slaughter.

But before expansion takes hold, pork production will fall 2 percent in second-half 2000 from a year earlier, based on a 4-percent decline in hog slaughter and a continued rise in average dressed weight. The forecast drop in slaughter results from a 2-percent-smaller pig crop for December 1999-May 2000 compared with a year earlier and slightly higher gilt (female) retention for the breeding herd. Farrowings during the period were down from a year earlier, but pigs per litter were up. (The move in the industry to larger specialized operations has been partly responsible for the larger litters. For example, farms with 5,000 or more hogs averaged 9 pigs per litter in March-May 2000, compared with 7.8 for farms with 1-99 head.)

Raising animals in confinement generates problems of manure management.
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Do environmental regulations affect decisions on location of operations?
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Spring's seasonal decline in slaughter rates, the public's taste for bacon, and the rising price of beef ratcheted up hog prices into the low $50's per cwt in late spring and early summer 2000. Demand for bacon continued strong, especially for fast-food industry use in sandwiches. As beef prices rose, food retailers featured the more price-attractive pork loins, strengthening loin prices.

With lower pork production in the near term, prospects for only modest expansion next year, and ongoing healthy retail demand, the hog market promises to be relatively strong into 2001. While there is some uncertainty about whether this year's strong demand will persist, hog prices are expected to average in the mid-$40s per cwt in 2000. In late fall 2000, when slaughter reaches a seasonal peak, hog prices could average around $40 per cwt. Given expected expansion in production in 2001, slaughter capacity could be strained late in the year, putting downward pressure on hog prices. Hog prices are expected to average $42-46 per cwt in 2001.

Retail price hikes usually lag behind increases in farm prices; with rising hog prices in first-half 2000, the farm-to-retail price spread can be expected to narrow, then widen. By second-quarter 2000, the price spread had shrunk to $1.68 per pound after averaging $1.81 in 1998 and 1999. Following the 2-year price decline, tighter pork supplies will probably push retail pork prices up 5-6 percent this year. In 2001, retail prices may increase about 1 percent, widening the spread again.

Producers will likely stay in a mood to expand, with hog prices much higher than a few years ago and lower feed prices anticipated over the next 18 months (record corn and soybean crops are projected for 2000). As producers rebuild their equity positions and as large facilities take extra time to get up to speed, however, growth will probably be gradual. AO

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Briefs

Technology

On the Upswing: Online Buying & Selling Of Crop Inputs & Livestock

As online possibilities for agricultural commerce expand, more and more farmers and ranchers are doing business over the Internet. The share of farms with Internet access more than doubled to 29 percent between 1997 and 1999, according to USDA's National Agricultural Statistics Service. More than 600,000 U.S. farms and ranches accessed the Internet in 1999, with 15 percent conducting e-commerce transactions, based on USDA's Agricultural Resource Management Study. This means that roughly 1 of every 25 farms and ranches in the country bought or sold agricultural products on the Net.

Many agricultural e-commerce ventures were just getting started in 1999, and farmers have adopted e-commerce at about the same rate at which they opted to try biotech crops when they were first introduced.

Farms that bought or sold online in 1999 were more likely to be younger, more educated operators than the national average. Almost three-quarters of active e-commerce users were between 35 and 54 (over 70 percent), and just over a third had completed college or graduate school. Only 46 percent in the farm population as a whole are between 35 and 54 years old, and 21 percent have completed college or graduate school. Higher rates of adoption among these groups are to be expected, because both age and education level are often strong predictors of willingness to adopt a new technology.

More than half (55 percent) of 1999 agricultural e-commerce came from the Heartland, Prairie Gateway, and Fruitful Rim regions, which together account for 47 percent of total farms. In addition, many farms that bought or sold online in 1999 were small (gross sales below $250,000), although small farms accounted for only 60 percent of online agricultural business compared with 94 percent of all U.S. farms.

Over 42 percent of online market activity in 1999 involved purchasing crop inputs, and online buying was related to farm size. A higher share of larger small farms (sales of $100,000 or more) bought crop inputs over the Internet than smaller farms (17 vs. 4 percent). Farms with operators going online to buy crop inputs accounted for almost one-tenth of U.S. corn and soybean acreage, and the same share of total seed, fertilizer, and chemical expenses. Crop-input purchases for these farms (all transaction methods) totaled $2.2 billion in 1999. In contrast with Internet purchases of crop inputs, farm size showed no relation to transactions for purchasing livestock inputs and selling livestock (58 percent of online market activity).

Agricultural commerce sites on the Internet are betting that farmers will do business online in increasing numbers to explore the potential benefits of e-commerce, ranging from cost savings to better and more timely agricultural information. Assuming reliable Internet service, the Net could also provide farmers and ranchers with the opportunity to buy and sell commodities efficiently and conveniently. AO

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Upcoming Reports—USDA's Economic Research Service

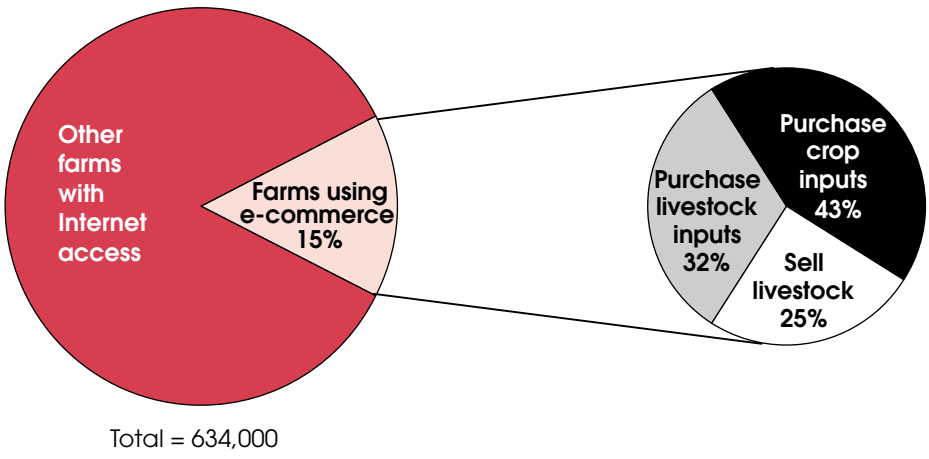
The following reports are issued electronically at 3 p.m. (ET) unless otherwise indicated.

September

7	*Fruit & Tree Nuts**
12	*World Agricultural Supply & Demand (8:30 am)*
13	*Cotton & Wool Outlook (4 pm)***
	*Oil Crops Outlook (4 pm)***
	*Rice Outlook (4 pm)***
14	*Feed Outlook (9 am)***
	*Wheat Outlook (9 am)***
18	*Tobacco**
20	*Agricultural Outlook**
21	*Sugar & Sweeteners**
25	*Agricultural Income & Finance**
26	*U.S. Agricultural Trade Update (3 pm)*
28	*Livestock, Dairy & Poultry (4 pm)***

*Release of summary, 3 p.m.
**Available electronically only

Purchases of Inputs Account for Most E-Commerce in Production Agriculture



Total = 634,000

Some farms reported more than one activity. Livestock inputs include purchased animals.
Source: Agricultural Resource Management Study, 1999.

Economic Research Service, USDA

Commodity Spotlight

Prices for Bumper Soybean Crop Hinge on China's Imports

Early this year, very dry conditions that began in the summer of 1999 prevailed over much of the nation's major soybean producing region. Soybean prices rallied in response to expectations of lower production in 2000. In late April and early May, dry soils allowed a rapid planting pace for spring crops, and partly in response to the price rise, U.S. farmers planted 74.5 million acres of soybeans for 2000, a 1-percent rise from last year's record. Nearly all of this year's increase was in the Northern Plains and Lake States, where crop rotations are still adjusting to incorporate more soybeans.

Following planting, abundant summer rains fell (though not in the Southeast), greatly increasing soil moisture. Once the threat of widespread drought disappeared, soybean prices fell sharply in anticipation of large production. Based on the record acreage and a national average yield forecast of 40.7 bushels per acre, USDA forecasts a record U.S. soybean crop in 2000 of 2.99 billion bushels. This year's output will likely exceed the 1998 record by nearly 250 million bushels. With beginning stocks large, U.S. soybean supplies are expected to rise 9 percent.

Despite this liberal supply expansion, U.S. soybean exports in 2000/01 are projected to rise only slightly, to 1,010 million bushels from last season's record 975 million. Primary reasons for the modest export growth are larger soybean harvests in China and South America and shrinking imports by the European Union (EU). In addition, the strength of the U.S. dollar compared with currencies of major export competitors and import buyers continues to curtail U.S. foreign trade.

With U.S. soybean demand expected to lag supply growth, ending stocks in 2000/01 are projected to swell to 465 million bushels from 280 million in 1999/2000, keeping downward pressure on soybean and soybean product prices. The 2000/01 soybean farm price is expected to average $3.90–$4.80 per bushel, down from the 1999/2000 average of $4.65, and to remain well below the loan rate ($5.26 per bushel) for the third consecutive year. Thus, loan benefits will continue to be important for soybean producers. Large supplies of corn and other feeds will also put downward pressure on soybean prices.

World oilseed production in 2000/01 is anticipated up 3.3 percent to 308 million metric tons. Virtually all of the increase is due to an 8-percent rise in expected soybean production. The U.S. and China account for three-fourths of the forecasted soybean output gain, with comparatively modest changes for most other countries. Growth in output by China, a major importer, is expected to contribute significantly to a projected fall in global soybean exports, from 46.3 million tons in 1999/2000 to 45.6 million.

China & European Union To Curb Imports

China's domestic prices for soybeans and products, unlike those of most nations, remain firm due to strong domestic demand and restrictive import policies. Vegetable oil prices within China, for example, are typically more than double world prices, because strict import quotas on vegetable oils maintain this price wedge. For oilseeds, however, a relative absence of import barriers provides a substantial advantage to domestic crushers in producing the highly valued vegetable oil. With recent changes in China's import policies for the soybean complex, including the re-imposition of a value-added tax on soybean meal in 1998 (*AO* September 1999), the country has successfully shifted toward greater reliance on domestic oilseed-crushing capacity vs. imports of protein meal and vegetable oil.

China's soybean imports soared 31 percent in 1998/99 and more than doubled to a record 9 million tons in 1999/2000, accounting for nearly 80 percent of world expansion in soybean trade last season. Soybean exports from the U.S. to China nearly tripled in 1999/2000, up from 9 percent of total U.S. exports to 17 percent. Conversely, China's imports of soybean meal and soybean oil plunged in 1999/2000 from 2 years earlier. U.S. shipments of soybean meal and soybean oil to China in 1999/2000 fell 100 percent and 80 percent, respectively.

Factors that drove the surge in China's 1999/2000 soybean imports also encouraged its own farmers to sow more soybeans this year instead of corn. China's soybean area in 2000 is estimated up 10 percent, which would push the projected crop to a relatively large 15 million tons (a serious drought is expected to reduce yields in northeastern China). As a result, China's soybean imports are expected to fall by one-fifth to 7.25 million tons in

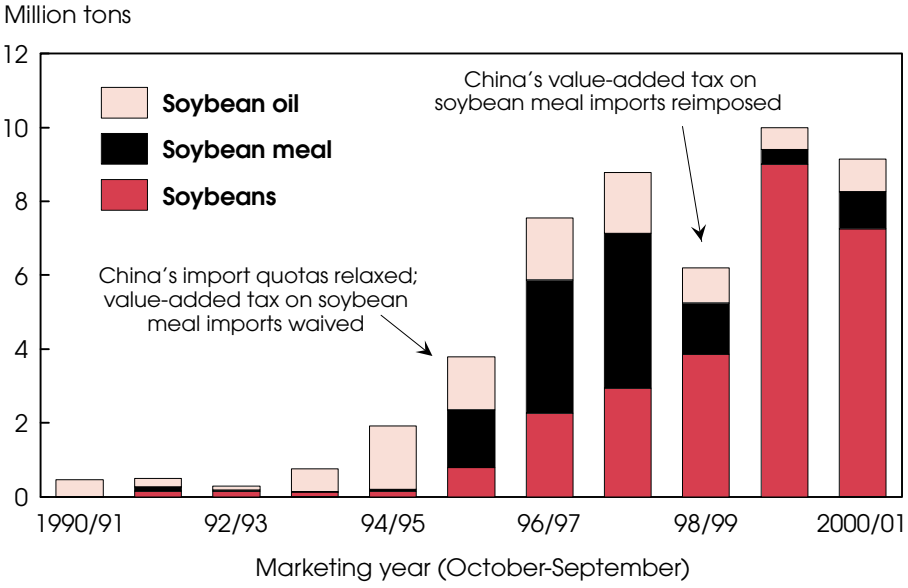
2000/01. The much larger domestic oilseed harvest would also mean that growth in Chinese imports of protein meal and vegetable oil will be modest next year, even if import barriers are lowered.

European Union soybean imports also are expected to decline in 2000/01, despite smaller domestic oilseed harvests and greater availability of global soybean supplies. The EU's recently implemented reforms (Agenda 2000) of the Common Agricultural Policy will allow minimum internal grain prices to fall 15 percent over the next 2 years. Since WTO commitments cap subsidized EU grain exports, much of the surplus will be fed to domestic livestock, thereby reducing EU soybean meal consumption. The substitution of grains will depress soybean meal prices and EU crushing margins. USDA projects EU soybean meal consumption to decline to 27.1 million tons in 2000/01 from 27.7 million in 1999/2000. The reduction is expected to trim EU imports of soybeans and soybean meal from 16.8 million to 16.3 million tons and from 20 million to 19.6 million tons, respectively.

In **India**, large vegetable oil imports weakened demand for domestic oilseeds earlier this year, keeping farm prices for soybeans just above the government support level and curbing area planted. However, normal development of India's monsoon is helping soybean yields recover from excessive dryness last year, and India's 2000/01soybean harvest is estimated up 10 percent to 5.7 million tons. India does not export soybeans but processes the entire crop for the soybean oil, exporting the surplus soybean meal produced. A larger soybean crop would boost projected Indian soybean meal exports to 2.5 million tons from 2.3 million in 1999/2000.

Late this year, as **South American** soybean farmers make planting decisions, greater U.S. and Indian competition and slower imports by China, the EU, and Japan will dim their price outlook. As in 1999/2000, the expansion in *Brazilian* soybean area should remain subdued, rising just 1 percent to 13.4 million hectares. Tight corn supplies should also encourage switching from soybeans in southern Brazil. Parts of Brazil coped with very dry conditions during this year's growing season, so with better weather assumed for next year, soybean output should rise modestly to 32.8 million tons from this year's 31.4 million. Slack world import demand may trim Brazil's soybean exports to 9.4 million tons in 2000/01 from 10.2 million.

China's Imports of Soybeans to Decline in 2000/01



2000/01 forecast.

Economic Research Service, USDA

A record *Argentine* soybean area is projected next year, a result mostly of expanded double cropping with wheat and some switching from sunflowers. A higher proportion of double-cropped soybeans would hold down the national average yield, however. Consequently, Argentina's soybean production is expected to rise only modestly from 20.7 million tons this year to 21.5 million in 2000/01. Larger competitor supplies and smaller world imports will limit Argentine soybean exports next year to 4.1 million tons, compared with 5.1 million this year.

China's Accession to WTO to Boost Soybean Product Imports

The future of Chinese agriculture, as well as world trade, will likely be transformed once the country gains admission to the World Trade Organization (WTO). As a prelude to getting consent from all WTO member countries, China has signed a bilateral agreement with the U.S.

The agreement would expand market access for soybean oil by replacing China's arbitrary, unannounced absolute quotas with a tariff-rate quota (TRQ). Under a TRQ, a lower tariff is applied to imports within the quota, while above the quota, no quantitative restriction exists provided the importer pays the higher, over-quota tariff. In principle, a country could set an over-quota tariff so high as to practically prohibit imports beyond the quota.

Under the bilateral agreement, the quantity of soybean oil that China would allow under the TRQ increases from 1.72 million metric tons next year to 3.26 million by 2006. The within-quota duty would be 9 percent (compared with 13 percent currently), and the over-quota duty would gradually decline from 74 percent to 9 percent by 2005. This reduction effectively eliminates the TRQ, leaving just a low 9-percent tariff (equivalent to rates in other WTO countries) on an unlimited volume of soybean oil imports.

An increasing proportion of the quota, which is now only available to a few state-owned importers, would be allocated to nonstate traders. China's tariff on soybeans (3 percent) and soybean meal (5

percent) would be bound at their current low rates. Subsidized agricultural exports would be forbidden.

Soybean oil exports from the U.S. (as well as from Argentina and Brazil) will almost certainly expand as China's over-quota tariff declines over the next 3 to 4 years, although the tariff-rate quota might not be entirely filled immediately after implementation, depending on China's vegetable oil consumption and domestic production. Competition in China's vegetable oil market will also arise from accession agreements between China and other countries, which increase import access for canola oil and palm oil.

Reducing China's import barriers on vegetable oil could sharply increase oil imports and drive down internal prices. Since many Chinese crushing facilities are much less efficient than Western plants, the reduction in processing margins should reverse the recent expansion in oilseed crushing and revive imports of soybean meal as well.

Because of its size, China is already one of the world's largest consumers of soybean meal and soybean oil. However, China's per capita use is still relatively low compared with developed nations, and lower prices could stimulate consumption. Following WTO accession, initial USDA estimates (*AO* March 2000) of the average change in value over baseline projections of China's imports during the next decade are: soybean oil, $352 million higher; soybean meal, $220 million higher; and soybeans, $402 million lower.

With concurrent changes in China's grain and livestock sectors, it is uncertain what would be the net effect on China's domestic oilseed production, as policies in previous years have generally been skewed toward grain production. Allowing more meat imports into China will also affect domestic feed consumption. Without domestic subsidies, it is likely that Chinese oilseed farmers will switch to more profitable crops or quit agriculture as they are exposed to more competition from more efficient foreign producers.

The rest of the world's oilseed crushers welcome lower protection for China's farmers and domestic processors, and greater opportunities to export oilseed products. Both the U.S. and Argentina substantially expanded crushing capacity in the 1990's. As China's policies promoted domestic oilseed crushing, considerable excess capacity developed, and crush margins throughout the world sharply narrowed. China's soybean crushing increased by nearly one-fourth in 1999/2000, while world crush (excluding China) declined 1 percent. The supply gluts have been most acute in the global vegetable oil market, as robust gains in palm oil output further depressed prices.

Price Competition To Remain Keen

Competitive prices are seen securing solid growth in U.S. soybean product demand, after 2 years of poor margins and declining crush rates. Domestic demand for both soybean meal and oil is expected to grow modestly in 2000/01, generally exceeding gains in export demand. U.S. soybean crush is expected to rise to 1.625 billion bushels in 2000/01 from 1.57 billion last season.

Low feed costs and rebounding prices in the hog sector should begin to promote herd expansion again next year. Domestic disappearance of soybean meal is projected up 3 percent to 31.25 million short tons, compared with an estimated 1-percent decline in 1999/2000. Soybean meal prices are forecast at $140-$165 per short ton vs. $165 last season.

With abundant U.S. and foreign soybean and soybean oil supplies, price competition will be keen. Projected U.S. soybean oil prices for 2000/01 are 15-18 cents per pound, little changed from the 1999/2000 average of 15.7 cents. Competitive prices and targeted foreign food aid will better position U.S. soybean oil exporters next year, and comparatively weak 1999/2000 export shipments of 1.2 billion pounds are forecast to recover to 1.8 billion next season. Domestic disappearance of soybean oil is anticipated up nearly 3 percent to 16.65 billion pounds.

Like their U.S. counterparts, South American oilseed processors have seen poor margins that prevented them from operating at full capacity. In Argentina, domestic soybean crushing is likely to remain stagnant in 2000/01, edging up just 0.1 million tons from 16.9 million in 1999/2000. In Brazil, slightly larger domestic supplies and stronger export and domestic demand for soybean meal and oil are boosting crush from 21.1 million tons in 1999/2000 to 21.6 million. Brazilian soybean meal exports, particularly to Europe, have benefited from the country's depreciated exchange rate. Competition from Brazil sharply curtailed U.S. soybean meal exports to Europe in 1999/2000.

Brazil's crushers (located mostly in the south) will need larger supplies to remain competitive. Access to soybeans grown in the expansion areas of the center-west has been complicated by interstate value-added taxes, which make it more profitable to export soybeans than to crush them domestically.

Despite anticipated trade liberalization, substantial growth in China's imports of soybean products is not expected in the near term. Therefore, the strength of Chinese import demand for soybeans will be a key determinant in the consumption of U.S. and South American crops in 2000/01. But given an already huge expansion in the U.S. harvest, an increase in world soybean prices remains unlikely, even in the most optimistic analysis of Chinese and EU demand. AO

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Policy

Weak Prices Test U.S. Sugar Policy

Expanding domestic sugar production and prospects for higher imports are testing the government's ability to prevent sugar prices from dropping below support levels. In June, USDA entered the sugar market for the first time since 1986, purchasing 132,000 tons of refined sugar at a total cost of $54 million. With this move, USDA projected savings of as much as $6 million in administrative costs that the government might otherwise incur from expected loan forfeitures later in the fiscal year. The move is also intended to support sugar growers and to help boost prices for sugar.

The purchase announcement in May stated that at least 75 percent of an initial (150,000-ton) purchase would be refined sugar and could be followed by additional purchases, depending on price and market conditions. The purchase was authorized under the cost-reduction options of the Food Security Act (FSA) of 1985. Since June, USDA's Commodity Credit Corporation (CCC) has been storing the purchased sugar. On August 17, USDA announced a 2-week signup period for the Sugar Payment-In-Kind (PIK) Program, which offers sugar beet producers the option of diverting a portion of this year's crop from production in exchange for government-held sugar.

Burgeoning Supplies

U.S. sugar production for fiscal year 2000 (ending September 30) is estimated at a record 9.035 million short tons (raw value)—almost 700,000 tons larger than fiscal 1999 production. One reason for this increase is record area harvested for sugar beets and sugarcane, spurred by higher expected returns compared with crops that normally compete with sugar for land use, such as wheat, feed grains, hay, soybeans, and rice. Also, sugar yields in Louisiana, which now surpasses Florida in sugarcane acreage, have risen more than 34 percent since 1995 as more acreage has been planted to high-yielding varieties.

For beets, last year's generally favorable growing and harvesting conditions permitted a clean crop, with higher sugar content than the previous year. Beets entered storage in good condition and remained in good shape through the winter months as sugar was extracted from them, although winter weather conditions were less than ideal for storage.

In addition to domestic production, imports are augmenting U.S. sugar supplies. U.S. imports are restricted by a tariff-rate quota (TRQ). Under the raw sugar TRQ, 40 quota-holding countries are each allocated a fixed amount which they may ship to the U.S. in a fiscal year (October-September) at a zero or low duty. Any raw sugar that enters the U.S. above the quota is subject to a duty of 15.36 cents per pound—high enough to be generally prohibitive.

As part of the Uruguay Round Agreement of the General Agreement on Tariffs and Trade (GATT), the U.S. had agreed to bind its minimum sugar TRQ imports at 1.256 million tons per fiscal year. When the World Trade Organization (WTO) replaced the GATT in 1995, the U.S. minimum access commitment became enforceable under its dispute settlement mechanisms.

USDA establishes the total TRQ (for raw and specialty/refined sugar) annually to control supply. If it is set too high, U.S. prices could decline below the price support level. If it is set too low, prices could rise to unacceptably high levels.

A year ago, USDA's fiscal 2000 projection put sugar production at record levels, and sugar imports in excess of the minimum bound level. In November 1999, the raw sugar TRQ was established at 1.501 million tons. At USDA's request, it was agreed that only the portion of the fiscal 2000 TRQ corresponding to the WTO minimum access level would be imported (allocated to quota-holding exporters), with the remainder constituting a reserve (unallocated) that could be imported if domestic supply failed to meet projected levels.

In addition to domestic production and sugar imports, supply is amplified with sugar extracted from imports of sugar syrups ("stuffed molasses") outside the TRQ. These imports have added an estimated 125,000 tons to the U.S. sugar supply in fiscal 2000.

Total U.S. sugar supply (including beginning stocks) for fiscal 2000 is currently estimated at 12.3 million tons. Total use (domestic deliveries plus exports) is estimated at about 10.4 million tons, leaving ending stocks at 1.91 million tons. The

Processors Must Calculate Minimum Sugar Prices to Arrive at Government Loan Forfeiture Decision in Fiscal 2000

Raw cane sugar	FL	LA	TX	HI	Puerto Rico	U.S. average*
			Cents per lb.			
Loan rate	17.85	18.35	18.04	17.64	18.27	18.08
Minus forfeiture penalty	1.00	1.00	1.00	1.00	1.00	1.00
Equals net proceeds from forfeiture	16.85	17.35	17.04	16.64	17.27	17.08
Plus cost of loan redemption and marketing						
Interest expense	0.90	0.93	0.91	0.89	0.92	0.91
Transportation costs	1.95	1.21	1.07	2.00	0.52	1.41
Location discounts	0.00	0.40	0.20	1.25	0.00	0.20
Equals minimum price	19.70	19.89	19.22	20.78	18.71	19.60

Refined beet sugar	MI & OH	MN & E. ND	CO, NE, & E. WY	W. ND MT, & W. WY	OR & ID	CA	U.S. average
				Cents per lb.			
Loan rate	23.77	22.78	23.45	22.31	22.20	23.85	23.06
Minus forfeiture penalty	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Equals net proceeds from forfeiture	22.70	21.71	22.38	21.24	21.13	22.78	21.99
Plus cost of loan redemption and marketing							
Processor's interest expense	2.57	1.15	3.12	2.97	1.12	3.18	2.35
Cash discount (2%)	0.52	0.47	0.52	0.49	0.45	0.53	0.50
Equals minimum price	25.79	23.33	26.02	24.70	22.70	26.49	24.84

Fiscal year beginning October 1999.
*Excludes Hawaii and Puerto Rico. No Hawaiian sugar is put under loan due to contractual obligations to ship Hawaiian product to the C&H refinery in California. The Puerto Rico crop is very small.

Economic Research Service, USDA

resulting stocks-to-use ratio is 18.4 percent, the highest level since fiscal 1986.

The abundant sugar supply relative to demand has caused U.S. sugar prices to decrease to levels not seen in 20 years. The widely quoted No.14 New York nearby futures price for U.S. raw sugar declined from a monthly average of 22.61 cents per pound in July 1999 to 17.24 cents in February 2000—a 24-percent decrease. Prices rebounded to the mid-19-cent range in mid-June, but plunged to 17-18 cents by mid-July, despite the USDA sugar purchase.

Refined beet-sugar prices have decreased as well. Prices for spot-refined beet sugar as quoted in the *Milling and Baking News* averaged only 19 cents per pound in June and July, down more than 7 cents from a year earlier.

Government Response Through The U.S. Sugar Program

The level of price support to the sugar industry is based on loan rates legislated in the 1996 Farm Act. Sugar processors (not farmers, whose crop can't be stored) can take out loans from the government with sugar as collateral. The loan rate that borrowers receive for raw cane sugar is 18 cents per pound, and for refined beet sugar the rate is 22.9 cents per pound.

Processors take sugar program loans for a maximum term of 9 months and repay them along with interest charges (or forfeit the collateral) before September 30. If the TRQ is less than 1.5 million tons, sugar loans are recourse, which like ordinary loans are repayable in cash only. Such loans have no price-supporting effect and only serve as a mechanism for short-term financing, with no risk of Treasury expense.

When the TRQ is higher than 1.5 million tons, loans are nonrecourse—i.e., the processor may forfeit the collateral in lieu of repaying the loan, and the government has no recourse but to accept the sugar as full payment. To the extent that processors put their sugar under loan, their return on that sugar (minus forfeiture penalty) is protected when market prices drop below the loan rate. Nonrecourse loans can, in theory at least, help support the sugar price, since forfeited sugar is effectively taken off the market in the near term. This price protection, however, incurs risk of government Treasury expense. With the TRQ set above the trigger in fiscal 2000, loans are nonrecourse.

Loans outstanding to the CCC as of mid-July are sizable, totaling $447 million and 1.1 million tons. Raw sugar loans made to sugarcane processors total $183 million, with 511,164 tons under loan, or about 12.4 percent of estimated production. Beet sugar loans total $264 million, with

620,618 tons under loan, or about 12.5 percent of estimated production. The maximum government budget exposure if all loans are forfeited is $425 million (taking into account offsetting revenue of $22 million from forfeiture penalties).

In order to discourage forfeiture, market prices must be high enough to cover the interest expenses, transportation costs (for cane), and market discounts (for beet sugar). Cane processors incur transportation and distribution costs in moving sugar to the refiner, in contrast with beet sugar which is already in refined form and requires no further processing. Cane processors also face location discounts required by some refiners. Sugar beet processors must recover the entire interest expense of loan repayment in their share of the sugar's selling price (unlike cane processors who share interest expenses with growers) as well as a 2-percent cash discount (beet sugar is normally sold at discount to cane).

In addition, processors must consider forfeiture penalties when deciding whether to forfeit sugar to the CCC. The 1996 Farm Act requires that processors who forfeit sugar pledged as collateral for a nonrecourse loan pay a penalty of 1 cent per pound for raw cane sugar and 1.072 cents per pound for refined beet sugar.

Accounting for these factors, the average minimum price necessary to discourage forfeiture in fiscal 2000 is about 19.6 cents per pound (mainland states) for raw sugar (cane) and about 24.84 cents per pound for beet sugar. With the mid-July New York nearby futures price between 17 and 18 cents per pound and the refined Midwest beet sugar spot price at 19 cents per pound in mid-July, forfeitures for both types of sugar seemed likely. Most beet sugar customers had already contracted for their sugar needs through the rest of the year by mid-July, and there was little likelihood that spot prices would recover sufficiently to exceed the minimum price for forfeiture. In fact, beet processors had already forfeited 42,000 tons as of August 1.

Dealing with Surplus Sugar

Results from the June 2000 USDA sugar purchase are unclear. On the positive side, the purchase seems to have reduced the costs USDA would have incurred through defaults on nonrecourse loans. Purchase prices averaged 20.5 cents, which is less than the sum of the loan rate (22.9 cents per pound) and accumulated interest (about 1.16 cents per pound) minus the forfeiture penalty (1.072 cents per pound).

However, the purchase does not seem to have had any noticeable effect on sugar prices. Industry observers, including independent analysts, have suggested that USDA should have offered to purchase much more sugar in order to affect the market price. Some sugar processors and growers had initially suggested a larger purchase, in the neighborhood of 250,000 to 370,000 tons. They now argue that USDA should consider a second purchase offer, acting quickly to restore market confidence.

As of August 1, CCC is holding an inventory of 174,000 tons of refined sugar, an amount equivalent to 2 percent of the total sugar production forecast for 2000. The inventory includes sugar that was recently forfeited, as well as the sugar purchased in June. Additional sugar forfeitures, which can take place on September 1 and on October 1, will likely boost government-owned stocks further. Processors intending to forfeit are required to file a 30-day notice with the CCC, but they are not bound to forfeit once they have filed notice.

What will USDA do with the sugar that is forfeited, in addition to the sugar purchased in June? On August 1, USDA announced a Payment-In-Kind (PIK) program, offering sugar beet farmers the option of foregoing harvest in exchange for sugar held by the CCC. On August 17, USDA announced a 2-week signup period beginning August 21 for the PIK Program. Farmers are limited to $20,000 in PIK payments. By reducing this year's harvest, the PIK program will help alleviate sugar overproduction, reduce federal expenditures by reducing probable crop loan forfeitures in fiscal 2001, and reduce government storage expenditures. The amount of sugar available for the PIK program is likely to increase in the coming months as sugar pledged as collateral for CCC loans is forfeited.

Another potential policy option was selling sugar for the manufacture of ethanol, but the corn industry indicated strong opposition because of adverse impacts on the corn market. And disposal in the international market (at a loss, which would violate World Trade Organization export subsidy commitments) or as emergency food aid was not widely viewed as an appropriate option.

Low Price Outlook For Fiscal 2001

The market situation may not improve in the coming year. Large predicted sugar supplies with only modest demand growth indicate continued economic distress for the industry.

On the supply side, USDA is projecting fiscal 2001 cane and beet sugar production at 8.973 million tons, slightly below the current year's estimated record level. Cane sugar production is expected to be higher in 2001 because of an expected record year in Louisiana as well as more production in Florida and Texas compared with fiscal 2000. In contrast, beet sugar production is expected to be down, with a return to more normal crop yield patterns and the possible closing of two processing plants in California.

In addition, imported sugar is expected to add substantially to U.S. sugar supplies in 2001. *Combined allocated portions of the TRQ* will likely be close to the minimum WTO access of 1.256 million tons, although the raw and refined sugar TRQ's for fiscal 2001 have not yet been announced.

Non-TRQ imports are projected at 448,000 tons. These include sugar for the Refined Sugar and Sugar-Containing Products Re-export Programs and the Polyhydric Alcohol Program (315,000 tons), high-tier tariff sugar (8,000 tons), and sugar extracted from sugar syrups entering outside the sugar TRQ (125,000 tons).

Imports from Mexico could be as high as 250,000 tons. According to the North American Free Trade Agreement (NAFTA) side-letter agreement, Mexico's duty-free access to the U.S. market will increase from 25,000 metric tons (raw value) to the smaller of 250,000 metric tons or Mexico's "net surplus production." (Net surplus production is the difference between Mexico's projected production in metric tons, raw value, less the sum of projected domestic consumption of sugar in metric tons, raw value, and high-fructose corn syrup in metric tons.)

Total U.S. sugar supply could reach 13 million tons, 4 percent over the estimated supply for fiscal 2000. As for sugar demand, use is forecast up only 1.3 percent to 10.56 million tons, including exports under the Refined Sugar Re-export Program (175,000 tons). Projected ending stocks for fiscal 2001 could therefore be as high as 2.44 million tons, implying an ending stocks-to-use ratio of over 23 percent.

An open question for the industry is whether the fiscal 2001 U.S. sugar loan program will again be set as nonrecourse. If the raw sugar tariff-rate quota is 1.5 million tons or below, the loan program will be recourse. USDA would lose its authority to purchase sugar under the cost reduction options of the 1985 Food Security Act, and the price-supporting feature of U.S. sugar policy (nonrecourse loans) would evaporate for the fiscal year.

When the sugar industry faced the recourse/nonrecourse issue in fiscal 2000, USDA established a raw sugar TRQ above the 1.5-million-ton trigger. Last year's announcement of the raw sugar TRQ was delayed 6 weeks while debate of the plan proceeded within the Administration. The "reserve" portion (249,000 tons) made available for allocation at the discretion of USDA remains untapped as the fiscal year draws to close.

The decision on the size of the fiscal 2001 raw sugar TRQ is normally announced before October 1. For fiscal 2001, the WTO minimum access for the U.S. sugar TRQ is 1.256 million tons. Assuming duty-free sugar imports from Mexico under the NAFTA side-letter are not counted as part of the WTO minimum access, Mexico's projected duty-free shipments will be added to the minimum access to determine the size of the TRQ.

If Mexico's net surplus production is at least 244,035 metric tons (269,000 short tons), the U.S. raw sugar TRQ will be above the 1.5-million-ton trigger, and loans for fiscal 2001 will be nonrecourse. On the other hand, if Mexico's net surplus production is lower than 244,035 metric tons, then USDA may choose to have a portion of the raw sugar TRQ remain unallocated as in fiscal 2000, so that loans remain nonrecourse and price support remains intact.

If loans are nonrecourse in fiscal 2001, possible U.S. government budget exposure from loan forfeitures is very likely to be much higher next year. With domestic sugar consumption failing to keep pace with growth in domestic production plus imports in the foreseeable future, the sugar market will remain under pressure, making it difficult to keep prices above support levels without continuing to reduce output through a PIK program or incurring large Treasury costs. AO

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Confined Animal Production Poses Manure Management Problems

Livestock and poultry manure applied to farmland provides a valuable source of organic nutrients. On many operations, careful nutrient management, including use of manure, can reduce or eliminate the use of commercial fertilizers. But nitrogen and phosphorus from manure can cause quality problems when they enter water systems. Reducing flows of excess nutrients from the application of animal waste to cropland has become a growing challenge to confined animal operations.

Nitrogen is easily soluble and is transported in surface runoff, tile drainage, and water leaching through soil (*AO* May 2000). Phosphorus is only moderately soluble, and relative to nitrogen, not very mobile in soil. But sediment-adsorbed phosphorus can transport considerable amounts of phosphorus to surface waters through erosion, and the potential for dissolved phosphorus loss to surface and groundwater increases with buildup of phosphorus in the soil.

The opportunity to jointly manage animal waste and crop nutrients as part of a single operation has decreased with the trend toward fewer, larger, and more specialized animal production operations, which have inadequate land available for utilizing manure.

According to the 1997 Census of Agriculture, sales of confined animal species (feedlot beef cattle, dairy, swine, and poultry) totaled over $75.4 billion, more than 45 percent of total farm sales. Federal policies that affect the industry's manure management costs—e.g., through the Clean Water Act (CWA) and farm legislation—can have significant economic effects on the livestock and poultry sectors. In addition, a growing number of states are implementing regulations directed specifically at confined livestock and poultry operations (see article on page 19).

This article presents national and county-level estimates of numbers of animals and quantity of manure nitrogen produced on confined animal operations (feedlot beef, dairy, swine, and poultry), as well as farmland acreage available for nitrogen application. The estimates are a joint effort of three USDA agencies—the Economic Research Service (ERS), Natural Resources Conservation Service (NRCS), and National Agricultural Statistics Service (NASS).

The study examines national data on farms that could be regulated under the CWA as point-source discharge sites, and on farms that may be eligible for assistance under the Environmental Quality Incentives Program (EQIP) of the 1996 Farm Act. Estimates of manure production and of land available for application are based on data from the four most recent Censuses

Estimating Excess Manure Nitrogen

Farm-level "excess" of manure nitrogen on a confined livestock farm is manure nutrient production less crop assimilative capacity. Manure nitrogen production is estimated using the number of animals by species, standard manure production per animal unit, and nutrient composition of each type of manure. Recoverable manure nitrogen is the amount that can be collected and disposed of by spreading on fields or transporting off the producing farm.

Each farm's nitrogen assimilative capacity (amount of nitrogen taken up by plants that are removed from the field at harvest) is based on onfarm production (acreage multiplied by yield) of 24 major field crops and pasture recorded by the Census of Agriculture. County, regional, and national estimates of excess nitrogen levels are aggregated from farm-level excess estimates (these meet all Census of Agriculture confidentiality requirements for publication).

The calculation process has the potential to overstate excess nitrogen on some farms—because many production farms move manure off the farm instead of utilizing it on land they control—or to understate because it ignores commercial fertilizer applications. Nevertheless, the excess values calculated here represent a consistent, national estimate of manure nitrogen that would need to leave producers' farms in order to be managed in a manner that reduces the potential for undesirable nutrient flows into the environment.

of Agriculture (1982, 1987, 1992, and 1997). The question addressed is: If a livestock or poultry operation applies its manure to the available farmland (cropland and pasture) under its control at an optimal rate to meet the nutrient needs of crops grown, how much excess nitrogen would require disposal?

If the operator controls adequate land for manure application, the focus of manure disposal should be on farm-level solutions. For producers who can gain access to land off their farms, manure disposal involves additional considerations such as timing of transfer and applications, liability for improper application, and transportation costs. Areas that have insufficient cropland for spreading manure at optimal rates will need other manure disposal strategies, with manure management costs depending on the manure management strategy employed and the extent of potential problems—e.g., variable nutrient content in the manure, establishing markets for excess manure nutrients, and manure storage constraints that necessitate coordination of production flows and manure nutrient usage.

Concentration in Animal Production & Manure Output

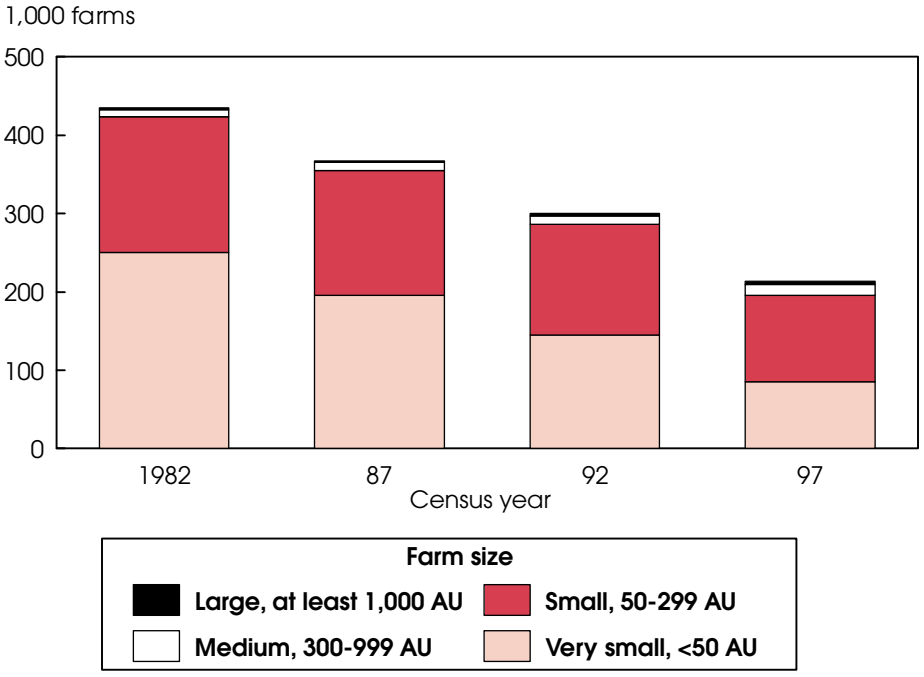
The number of farms with confined animals has declined dramatically and steadily from 435,000 farms in 1982 to 213,000 in 1997. The number of animals on these farms is measured based on an *animal unit* (AU), which allows multi-species comparisons relative to some specific standard—e.g., 1,000 pounds of live animal weight. Using the 1000-pound definition in this analysis means an AU is equivalent to 1.14 head of feedlot beef, 0.74 dairy cow, 2.67 swine for breeding, 9.09 swine for slaughter, 250 laying hens and pullets greater than 3 months old, 455 broiler chickens or pullets less than 3 months old, 50 turkeys for breeding, or 67 turkeys for slaughter.

All the decline in numbers of confined animal farms occurred in the smallest size groups—i.e., very small operations with fewer than 50 animal units (AU), and small operations with 50 to 300 AU. In contrast, the number of medium-size operations (300-999 AU) grew by 4,400 farms, and large farms (at least 1,000 AU) more than doubled to almost 4,000 farms. However, in 1997, medium-size farms accounted for only about 6 percent of all confined animal farms and large farms almost 2 percent, so that very small and small farms still dominate the number of confined animal farms by a wide margin.

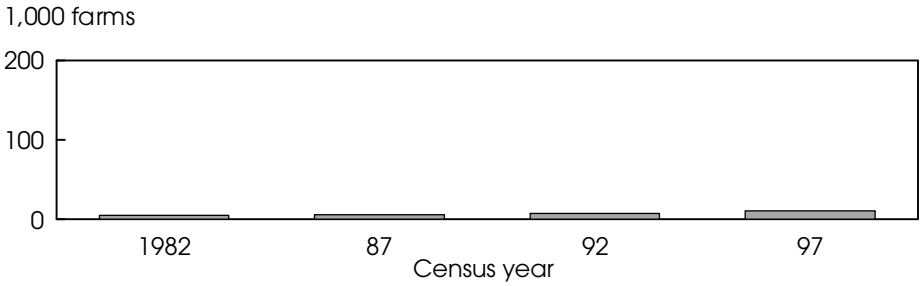
At the same time that the number of confined animal farms was falling, the number of confined animal units rose 10 percent. On very small farms, AU's dropped 64 percent overall to 1.6 million, while on small farms, AU's fell 74 percent to 11.1 million. Meanwhile, AU's on medium-size farms grew by more than half—from 4 million to 6.4—and almost doubled on large farms to reach 14.5 million.

Average AU per farm increased 6-17 percent for the lower three size classes between 1982 and 1997, but dropped 10 percent—from 4,019 AU, on average, to 3,643 AU—for large confined animal

Numbers of Small and Very Small Confined Animal Farms Are Declining. . .



. . .While the Number of Potential CAFO's Is Small but Growing

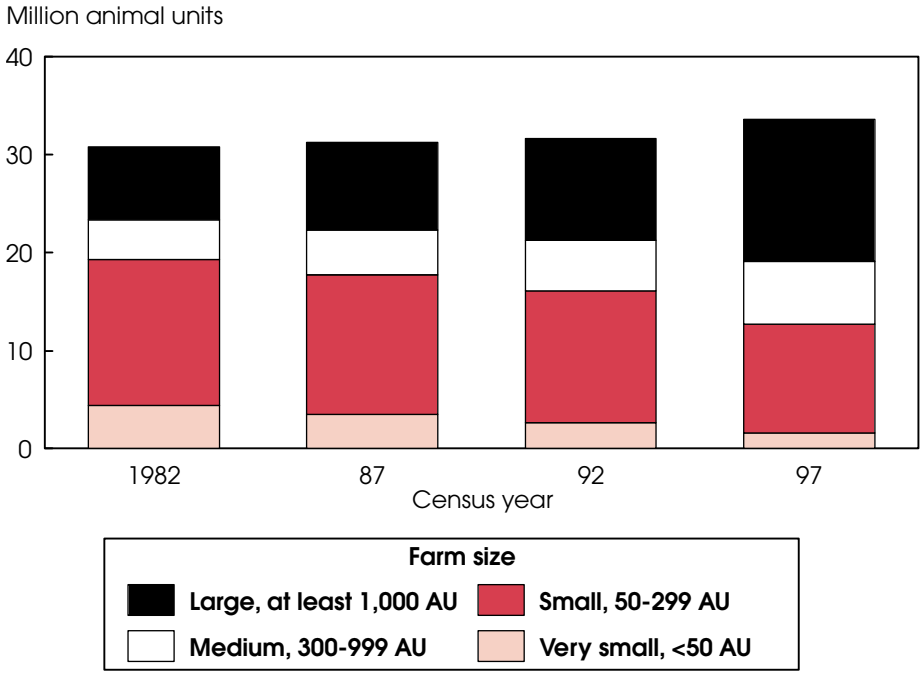


An animal unit (AU) in this analysis is the equivalent of 1,000 pounds of live animal weight—e.g., 2.67 swine for breeding or 67 turkeys for slaughter. Potential concentrated animal feeding operations (CAFO's) are confined animal farms with large enough numbers of animals to likely make them subject to regulation under the Clean Water Act. All large-size and most medium-size confined animal farms are potential CAFO's.

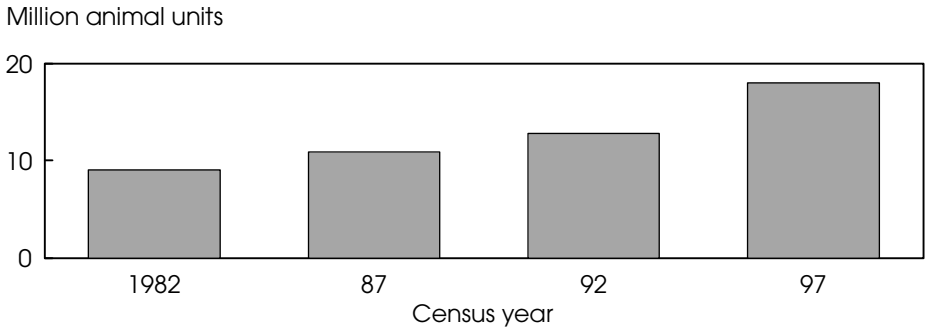
Source: Based on data from the Census of Agriculture.

Economic Research Service, USDA

Production Has Shifted to Medium- and Large-Size Confined Animal Farms. . .



. . .and Doubled on Potential CAFO's



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Source: Based on data from the Census of Agriculture.

Economic Research Service, USDA

operations. Large swine feeding operations proliferated during the period, and large swine operations generally have fewer AU than other types of confined animal operations.

Quantities of nutrients produced by confined AU's rose about 20 percent in 1982-97, while acreage on livestock and poultry farms declined. The result is a 20-percent increase in estimated excess manure nutrients during a 15-year period, because of inadequate cropland for utilizing manure on the producing farms. For example, confined animals produced an estimated 1.23 million tons of recoverable manure nitrogen (collectible for spreading) in 1997, but 73 million acres of cropland and permanent pasture controlled by operators of confined livestock and poultry operations is estimated to have assimilative capacity for only 38 percent of the calculated nitrogen available. This is one reason for increased policy attention focused on confined livestock operations.

Inability to assimilate all manure nutrients produced on the farm occurs on operations of all sizes, but not equally. In 1997, about 15 percent of very small farms and 72 percent of large operations had inadequate capacity to utilize all the nitrogen produced onfarm. Very small farms produce only about 2 percent of the national total of excess nutrients, while small farms (50-299 AU) produced more recoverable manure nitrogen than any other size class—almost 500,000 tons—and about 30 percent of total excess nitrogen, primarily accounted for by poultry production.

Nutrient production from medium- and large-size confined animal operations increased significantly during 1982-97, and quantities of total recoverable manure nitrogen and excess nitrogen almost doubled. Recoverable manure nitrogen production on medium-size operations increased 68 percent, and excess nitrogen by 83 percent; on large farms the corresponding increases were 102 percent and 104 percent. Medium-size farms accounted for 6 percent of confined animal operations but for 20 percent of 1997 excess nitrogen from confined animal production, while large farms accounted for 2 percent of confined animal farms and almost half of excess nitrogen.

Farms subject to regulation under current CWA rules are designated concentrated animal feeding operations (CAFO's) based on number of animal units and amount of point-source discharge from the operation. CAFO's are not directly identified in Census of Agriculture data. Because the regulatory impact of the CWA on CAFO's is of interest to policymakers, ERS has constructed a category of farms—"potential" CAFO's—that would likely be considered CAFO's under EPA rules. Farms are designated as potential CAFO's from estimates of annual average numbers of animals on the farms, derived from data on annual number of animals sold and year-end inventories. Potential CAFO's—5 percent of all confined animal farms—include all farms in

the large-size category and most in the medium-size.

Potential CAFO's more than doubled from 1982 to 1997, increasing from about 5,000 farms to 11,200, while the number of AU's on these farms increased from 9.1 million (30 percent of total confined AU's) to 18 million (54 percent of total confined AU's). Nationally, the average number of AU's on each potential CAFO has remained stable, so the gain in AU's on potential CAFO farms was due simply to the increase in number of potential CAFO's. Potential CAFO's could be the source of over half of estimated excess itrogen from all confined animal operations.

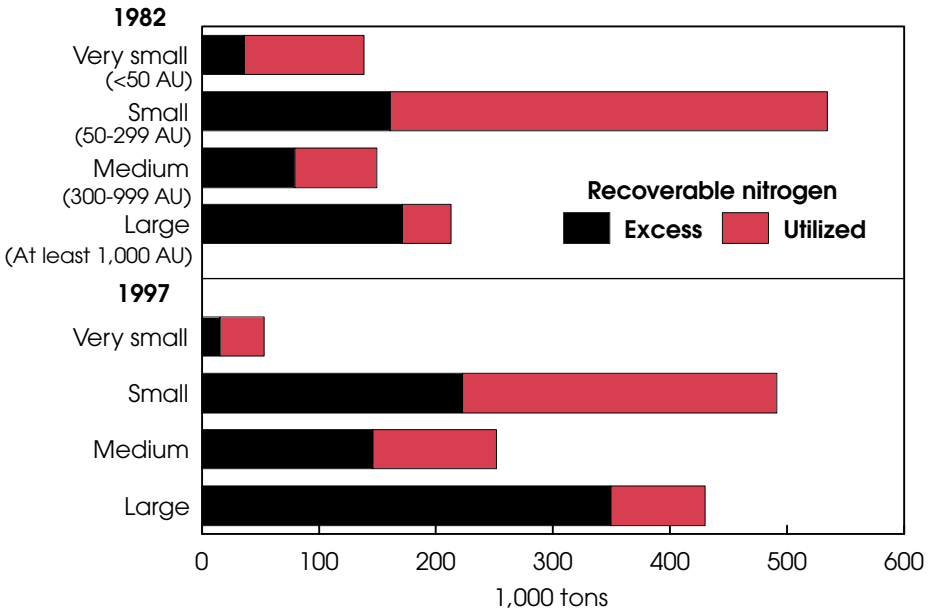
High Excess Nitrogen From Poultry

Confined animal operations and resulting manure nitrogen are not evenly distributed across the nation. In 1997, the Southern Seaboard region—a major poultry- and swine-producing area—generated the largest quantity of recoverable manure nitrogen (256,000 tons, or over 20 percent of the nation's confined animal total). The region also has farms with among the fewest acres per AU on which to apply manure, so it accounts for the largest quantity of excess nitrogen (200,000 tons, or over 27 percent of the national confined animal total).

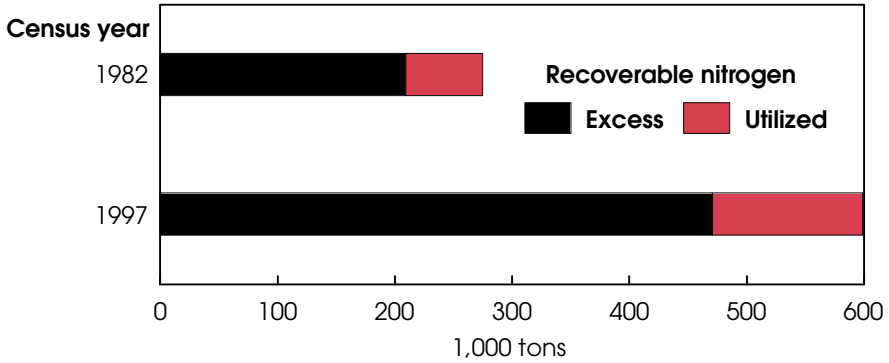
The Southern Seaboard leads in production of recoverable manure nitrogen despite having about half the AU of the Heartland region. Nutrient production differs by species, with some types of poultry producing up to 5 times as much nitrogen per AU as feedlot beef cattle. While both the Heartland and Southern Seaboard regions produce significant numbers of swine, the Southern Seaboard region has more poultry and fewer cattle, resulting in greater recoverable manure nutrients from fewer AU.

Total recoverable manure nitrogen declined from 1982 to 1997 in both the Northern Crescent and Basin and Range regions, but increased in all other regions. The Southern Seaboard showed the greatest increase in both absolute and relative terms—95,000 tons, an increase of almost 60 percent.

Medium- and Large-Size Farms Accounted for More Recoverable Manure Nitrogen in 1997 than in 1982. . .



. . .and Estimated Recoverable Nitrogen from Potential CAFO's Has More Than Doubled

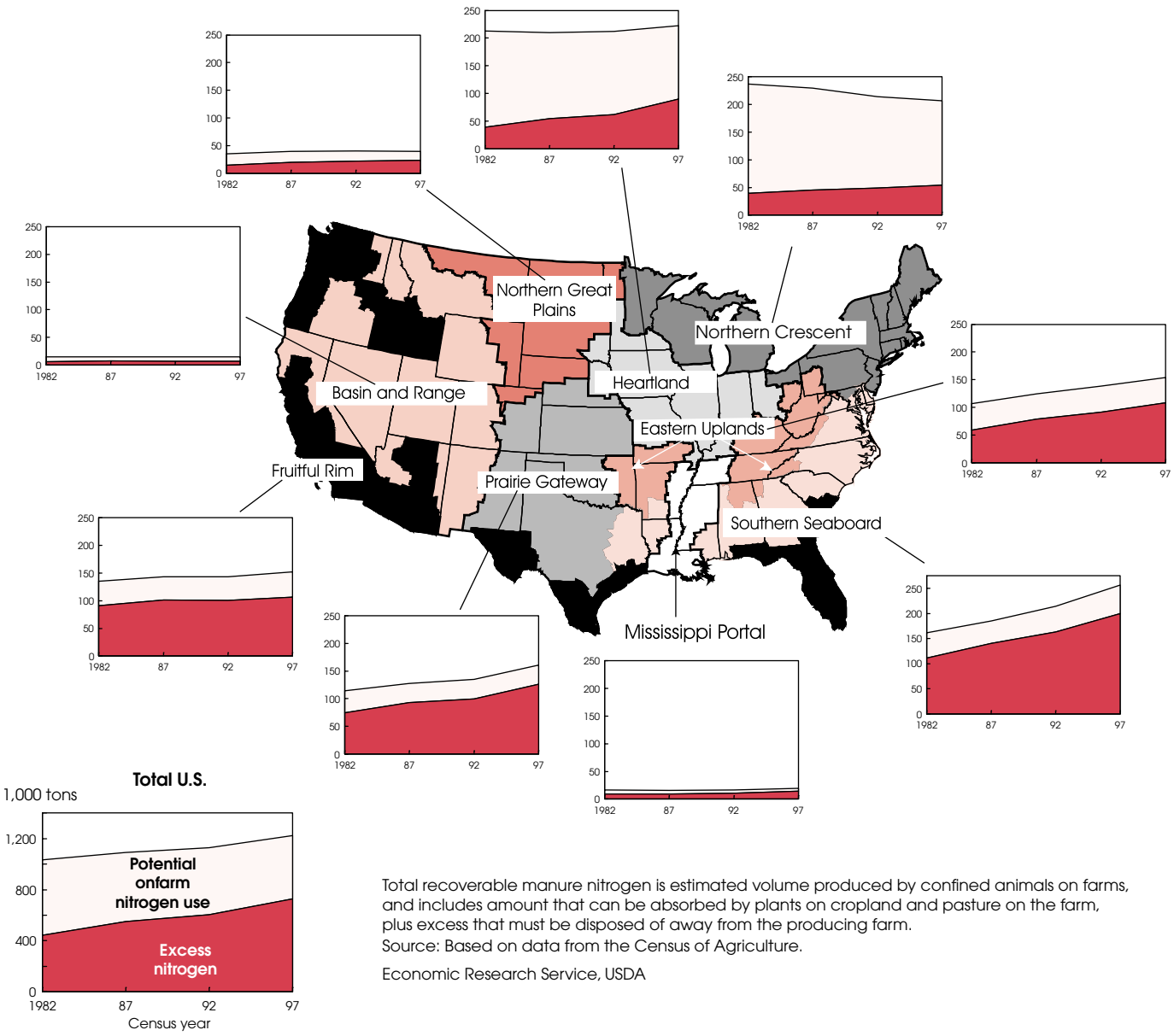


An animal unit (AU) in this analysis is the equivalent of 1,000 pounds of live animal weight--e.g., 2.67 swine for breeding or 67 turkeys for slaughter. Recoverable manure nitrogen is estimated collectible volume produced by confined animals on farms. Assumes utilized manure nitrogen is spread on producing farms' cropland and pasture at optimum rates; excess must be disposed of by applying to land on other farms or by other means. Potential concentrated animal feeding operations (CAFO's) are confined animal farms with large enough numbers of animals to likely make them subject to regulation under the Clean Water Act.
Source: Based on data from the Census of Agriculture.

Economic Research Service, USDA

About three-fourths of U.S. counties contain farms that have to dispose of recoverable manure nitrogen in excess of onfarm crop and pastureland needs. While production of excess manure nitrogen does not always contribute to water quality and other environmental problems, manure movement off confined livestock farms is necessary to avoid excess nitrogen accumulation. Areas with excess manure may need mechanisms to encourage land application on other farms, or to provide incentives for alternative manure treatment strategies.

Southern Seaboard Has Greatest Total Recoverable Manure Nitrogen, and Most Cannot Be Used on the Producing Farms



Total recoverable manure nitrogen is estimated volume produced by confined animals on farms, and includes amount that can be absorbed by plants on cropland and pasture on the farm, plus excess that must be disposed of away from the producing farm.
Source: Based on data from the Census of Agriculture.

Economic Research Service, USDA

Generally, excess manure nitrogen is greatest in counties with the largest concentration of confined animals, although AU numbers and excess manure nitrogen are not perfectly correlated. For example, northern Alabama and Georgia, where poultry is dominant, have high calculated levels of excess nitrogen because poultry manure has a high nitrogen content per AU and land available for spreading is limited. Northeastern Iowa and southern Wisconsin have a relatively high concentration of animals but lower excess nitrogen than might be expected, because there is more available land per farm and lower nitrogen production per AU.

Concentration of excess manure nutrients on small poultry farms and on all larger sized operations may provide opportunities to effectively target policies to reduce excess manure nutrients. The potential exists to develop and utilize econonomical, effective off-farm technologies, since operations are geographically concentrated (minimizing manure transport costs) and species-dominant (producing relatively homogeneous manure for processing).

Future of National Policies Affecting Animal Operations

Federal policies related to regulation of manure produced on confined animal operations are still evolving. The *Clean Water Act* (CWA)—passed in 1972 and

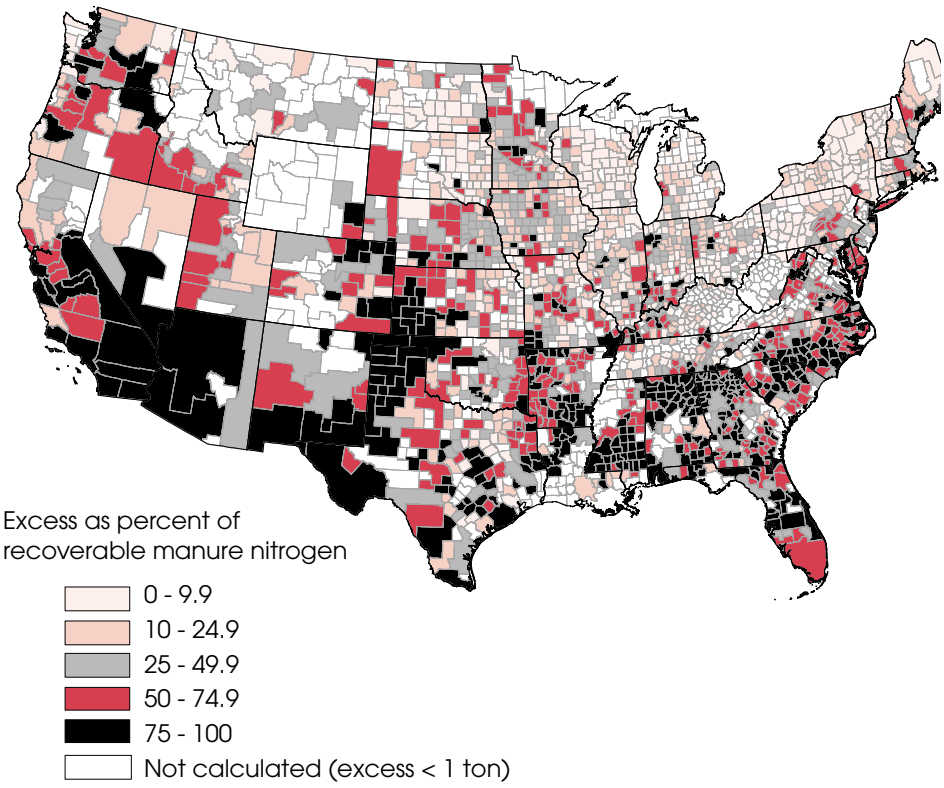
administered by the Environmental Protection Agency (EPA)—is the major piece of Federal legislation affecting animal operations. The CWA defines water quality in terms of designated beneficial uses (e.g., drinking water, recreational use, and aquatic life support) and establishes criteria to support each use. USDA's *Environmental Quality Incentive Program* (EQIP)—authorized by the 1996 Farm Act—replaces most previous financial assistance programs and better targets assistance to areas most needing actions to improve or preserve environmental quality.

Under the *CWA*, National Pollutant Discharge Elimination System (NPDES) permits are required for point sources (facilities that discharge directly into a discrete ditch or pipe) that will empty into navigable waters. NPDES permits for animal feeding operations currently focus solely on developing engineering (technology-based) solutions to reduce runoff and spills from manure storage and treatment structures.

Under 1974 NPDES regulations, several criteria may be used to designate an animal feeding operation (AFO) as a concentrated animal feeding operation (CAFO), thereby labeling it a point source. The criteria may include number of animals, days in confinement, lack of vegetation in the confinement area, and potential for waste runoff into waterways. For example, an AFO could be designated a CAFO if the farm confines 1,000 or more slaughter or feeder cattle for a total of 45 days annually, or if the farm confines 300 head of slaughter or feeder cattle for 45 days annually *and* discharges directly into a waterway. Threshold animal numbers are specified for slaughter and feeder cattle, dairy cows, swine, laying hens, broilers, chickens, turkeys, horses, sheep, ducks, or may be a combination of animals.

EQIP is a voluntary agricultural program that can improve water quality through changes in farm nutrient management practices. EQIP provides technical, educational, and financial assistance to farmers and ranchers for adopting structural, vegetative, and management practices that protect or enhance environmental quality. By statute, half the program's available funding is targeted to conservation problems of livestock and poultry producers.

Most Counties Have Confined Animal Farms with Excess Manure Nitrogen to Move Off-Farm



Excess manure nitrogen as share of total recoverable (collectible) nitrogen from confined animals. Excess manure nitrogen is amount beyond a farm's absorptive capacity on cropland and pasture—i.e., it must be moved off the producing farm.

Economic Research Service, USDA

All 213,000 confined livestock and poultry farms are eligible for nutrient management technical assistance under EQIP. Operations with fewer than 1,000 AU are also eligible for financial assistance with manure storage or treatment facilities. Operations with more than 1,000 AU—the 2 percent that produce 35 percent of excess nitrogen—are not eligible for government financial assistance to design and build manure management facilities.

Limited funds may lessen the effectiveness of EQIP. Funds allocated by EQIP were near $200 million for 1997 and 1998, but declined to around $175 million in 1999 and 2000. Even if total annual EQIP funding were devoted solely to manure management planning, average spending would be only $820 per confined livestock or poultry farm.

USDA and EPA announced a new initiative in 1999—the *Unified National Strategy for Animal Feeding Operations*—that will set minimum standards for all state water quality protection programs. Regulations to implement the Unified Strategy are currently under review.

Under the Unified Strategy, all animal feeding operation (AFO) owners and operators would be expected to develop and implement site-specific comprehensive nutrient management plans (CNMP), including onfarm application and off-farm disposal. The strategy will revise the criteria that identify operations requiring an NPDES permit. The largest operations will still require a permit, but NPDES permits will also be required of operations with

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unacceptable conditions, regardless of size, that pose a significant risk of water pollution or public health problems, or that are concentrated in a watershed designated as impaired because of nutrient discharge from AFO's. For example, many poultry farms in the small-size category that are not currently required to obtain NPDES permits might be required to have them in the future, if their concentration in the watershed makes a significant contribution to water quality problems.

Under current EPA proposals for future NPDES permits, development of a CNMP will be a required part of the permit process. Permit applications will include management strategies for manure collection, storage, and disposal—including use of manure nutrients in crop production.

The CNMP requirement brings land application of manure into the Federal NPDES permitting process for the first time. The costs of implementing off-farm manure management strategies are still to be determined. But more stringent application of the CNMP requirement on potential CAFO's could significantly reduce the possibility of excess nutrients entering water sources. AO

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In upcoming issues of Agricultural Outlook

- Farm program subsidies—how important to ag production and markets, and the rural economy?
- U.S. tax policy—impact on agriculture
- Outlook for U.S. corn and cotton sectors
- The economics of tariff-rate quotas
- Food price outlook for 2001
- Outlook for U.S. ag exports

Environmental Regulation & Location of Hog Production

Environmental regulation, and the added costs generally associated with compliance, are considerations often factored into the choice of a business location. It has been hypothesized that geographic variation in environmental regulations and enforcement can induce a migration of industries across state or country boundaries to "pollution havens" where compliance costs associated with environmental regulations are lower.

Analysis of how environmental regulation and enforcement at the state and county level (instead of at the Federal level) have affected location decisions by industrial agriculture can provide some insight into whether the pollution haven phenomenon applies to agriculture. In addition, it may help explain why efforts to regain some national control of the regulatory process by implementing national standards have engendered negative reactions. For example, local pressures could cause Congress to balk at appropriating funds for enforcement if the U.S. Environmental Protection Agency (EPA) tightens existing Federal water quality laws through regulations proposed for confined animal feeding operations.

Study of whether environmental regulation causes agricultural businesses to relocate may also shed some light on effects of environmental regulation in the international arena. Proposals to harmonize (reconcile) environmental standards across international boundaries add to the urgency of the question because of concerns raised that trade liberalization could induce increased investment in agricultural production in countries with lower environmental standards.

Two emerging issues addressed by USDA's Economic Research Service (ERS) are: 1) the relationship between stringency of regulation and location of animal production, and 2) environmental implications of confined animal production (see article on page 12). This article discusses some of the reasons for heightened interest in the links between stringency of environmental regulation and location of the U.S. swine industry. ERS analyzes the impacts of environmental regulation on the location of animal production using information from studies presented at an ERS-Farm Foundation workshop on industry location analysis, as well as extensive review of recently published analyses.

Hog Industry Relocation & Concentration

Regulations to protect the environment have historically addressed concerns about environmental pollution from identifiable "point" sources in the manufacturing sector. But advances in understanding the potentially damaging effects of pollutants in runoff from agricultural production sites—i.e., point- and nonpoint-source pollution—have led to efforts to extend environmental regulation to agricultural activities as well.

A report by the EPA published in the *Federal Register* concludes that agriculture is the leading source of pollutants in assessed rivers and streams, contributing to 59 percent of reported water quality problems and affecting about 170,000 river miles of the assessed waterways. Unlike manufacturing, however, it is difficult to correlate damage to the environment with production activities at a specific farm or animal production operation. Nevertheless, concern about the environmental effects of agricultural production is becoming more widespread, exacerbated by the proliferation of large animal production facilities, particularly those concentrated in certain geographic areas.

Recently released data from the 1997 Census of Agriculture indicate the number of hog operations in the U.S. has decreased by half in 10 years, but total inventory has remained relatively constant as smaller operations exit and the average operation gets larger. Swine production is more mobile than other livestock sectors. Hogs can be transported more easily than other livestock, and are not tied to the land, as are cattle. Also, contract operations account for a large share of hog production, and when a contractor moves or expands into a new region, new contracts can be negotiated in the new location.

Hog production has expanded in recent years in areas in the South and in nontraditional areas of the West, and a number of counties that were only minimally involved in the hog industry as of 1992 now have significant numbers of hogs. This has prompted speculation that large operations moved to those areas because of possibly less stringent environmental regulations.

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Some high-profile environmental accidents have pointed to the risk potential of concentrated animal production. For example, the problem of leakage from large waste lagoons attracted public attention when millions of gallons of manure overflowed in North Carolina in the aftermath of Hurricane Floyd in 1999.

Implementation of environmental regulations can impose compliance costs on producers and reduce profits. Estimates from one study of hog producers in the U.S. and the European Union (EU) put U.S. waste management costs at $0.40 to $3.20 per hog, which represents 1-8 percent of total hog production costs for the operations studied, higher than in previous years because of added costs of regulatory compliance. Because of the stringency of the EU Nitrate Directive, estimated costs of compliance for hog operations there are higher than in the U.S., raising concerns about EU export competitiveness.

Producers may respond to existing or impending costs of regulation by exiting the industry or by changing the scale and/or location of production. Moving to a different state or country might mitigate or bypass the costs of local or domestic environmental regulations altogether, but adding new capacity at the same site might enable economies of scale that offset additional costs of compliance. However, responses that promote larger hog operations create potential for greater volumes of hog manure to adversely affect water quality in a local area.

State-level estimates in December 1999 indicate that 17 states account for the vast majority of very large hog and pig operations (inventory exceeding 5,000 head). North Carolina, Iowa, and Minnesota stand out in number of very large operations. Perhaps even more significantly, however, very large operations in Colorado, Oklahoma, and Texas, while much fewer in number, account for almost all hog production in those states.

EPA requires operations with an inventory of more than 1,000 *animal units* to have National Pollution Discharge Elimination System (NPDES) permits for manure storage or to demonstrate that there is no runoff from the farm (EPA defines 1,000 animal units for hogs as 2,500 head).

Many of 100 Top-Ranked Hog Counties Moved Up Substantially During 1992-97

Rank				
1997	1992	County	State	1997 inventory
				1,000 head
1	1	Duplin	NC	2,034
2	2	Sampson	NC	1,776
3	797	Texas	OK	907
4	3	Sioux	IA	762
5	28	Bladen	NC	759
6	736	Sullivan	MO	d
30	1,904	Beaver	UT	263
33	366	Columbus	NC	258
35	401	Jones	NC	253
48	776	Yuma	CO	206
49	1,361	Dallam	TX	d
59	330	Ringgold	IA	181
64	1,888	Morton	KS	d
67	1,490	Woodward	OK	d
71	315	Edgecombe	NC	169
97	347	Philips	CO	d
98	406	Gentry	MO	139
100	33	Johnson	IA	138

Selected counties ranked by inventory. Annual inventory includes breeding and marketing inventory.
d = Withheld to avoid disclosing data for individual farms.
Source: Census of Agriculture.
Economic Research Service, USDA

However, interpretation of the regulation varies from state to state, and many states pursue enforcement only in response to citizen complaints. According to EPA, a very small proportion of operations with more than 2,500 hogs had acquired the appropriate manure storage permits.

Type of ownership of hog producing and packing operations appears to play a role in the locational response to environmental regulation. Individual producers with family-owned operations are not likely to move operations to different locations as a result of regulatory changes. Instead, they are more likely to continue operating, perhaps at a different scale, or shut down the enterprise. In addition, as the hog industry moves toward more production under contract, contractees who grow hogs for larger operations may have limited ability to adapt if they incur additional costs from regulations and get no financial assistance from contractors. In the past, production contracts allowed for specific returns on the finished product, but have left the costs of manure management to the producer.

Most large corporate production companies already operate facilities in multiple states, easing the shift of production between states in response to changes in business conditions. For example, Purina has production facilities in seven states. Similarly, many top packers also operate multiple plants across states, so the economic benefits of clustering production and packing facilities together could be maintained even as production capacity shifts. Given advances in litter production technology (i.e., more litters per sow and more pigs per litter), businesses that own over 100,000 sows could produce 2 million pigs a year for slaughter, promising large potential savings on transportation costs from clustering facilities in fewer, more hospitable locations.

Analyses of business location decisions often focus on four factors: natural endowments, economic costs, business climate, and public policies (including environmental regulation). International location studies based on interviews with business executives have rated political stability, taxes, exchange rate convertibility, and repatriation of profits as key factors in foreign investment decisions. Environmental regulations were ranked much lower on the list of considerations.

Studies of the hog industry in particular indicate that significant variables (factors) in location decisions for hog farms are precipitation, existing percentage of large hog farms in the state, feed costs, and density of production. Evidence indicates that the recent shift in hog operations to western states (primarily Colorado, Oklahoma, and Texas) resulted in part from savings in transportation costs, because the move puts exportable products one day closer to the Japanese market compared with producers in the Midwest and South. In addition, the West offers a relatively disease-free environment for raising animals. Nevertheless, production shifts to these more sparsely populated regions highlights the relationship between location, concentration, and environmental impact.

As animal operations become larger, more states are looking at ways to protect environmental quality from excess animal waste. Large confined animal operations can present major problems at the local level. Part of the potential environmental impact lies in the assimilative capacity of soil and crops to prevent nitrogen and phosphorous from reaching local surface water and groundwater resources. The National Pollution Discharge Elimination System point-source permit system—part of the Clean Water Act—addresses on-site storage of manure, but not disposal.

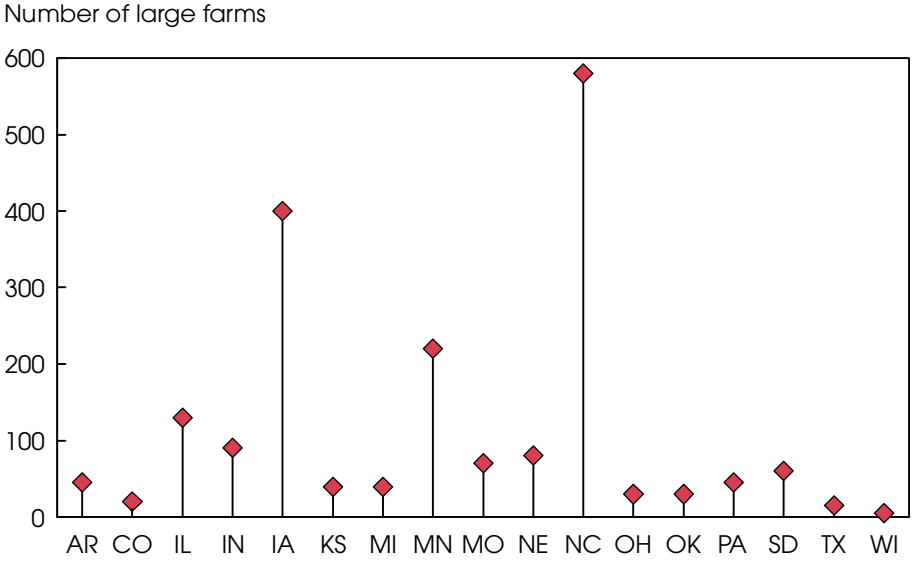
Regulatory Stringency & Enforcement Vary

States' policies regulating nonpoint-source pollution may vary because of

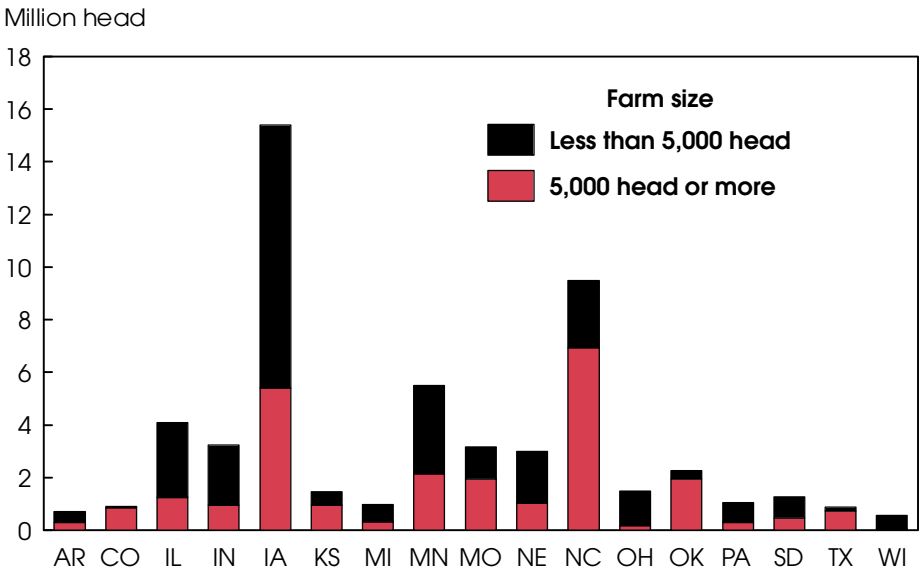
- the design of Federal water policy laws,
- characteristics of the nonpoint-source pollution, and
- characteristics of the states that have to deal with water quality issues.

Federal water quality laws reflect both the nation's desire to address existing environmental problems, and the conviction that states should have sufficient authority and flexibility to design and implement their own environmental laws. States also have the option to provide funding for voluntary programs to address the environmental needs of local areas.

North Carolina Leads in Number of Large Hog Farms. . .



. . .and in Hog Inventory on Large Farms



Inventory on large operations is at least 5,000 head annually, and includes breeding and marketing inventory.
Source: National Agricultural Statistics Service, USDA, *Hogs and Pigs,* December 1999.
Economic Research Service, USDA

When the Clean Water Act was passed in 1972, point sources were seen as the primary culprits in water and air pollution, so the discharge permit program was designed to limit emissions by known polluters. Nonpoint-source pollution was considered a lesser problem that could be left to the states to manage. In fact, there is some benefit to relegating nonpoint-source pollution law to state or local level jurisdictions that are closer to the problem—e.g., more detailed knowledge of the problem and more sensitivity to impacts of the solution.

A possible drawback to locally developed policies is that local jurisdictions sometimes have insufficient resources to develop and enforce regulatory programs. In addition, regulations at a local level may not effectively address transboundary issues, which may lead to an increase in frequency of pollutant flows from one jurisdiction to another. If there is a solution to a transboundary issue, it often comes from the coordination of activities of local jurisdictions by a Federal government agency like the EPA.

Nonpoint-source pollution is characterized by difficulty in observing runoff and by natural variability of pollution flows with changes in weather, so linking observations of particular management practices associated with confined hog feeding operations to changes in water quality is problematic. And predicting how changes in management practices will affect water quality presents challenges.

Differences within states in farming practices, land forms, climate, and hydrologic characteristics is another complication in policy design. Variation in the environmental impact of agricultural production can occur even within relatively small geographic areas. Transboundary effects, uncertainty in measuring actual water quality damage, and time lags in the movement of a pollutant into a water system also factor into policy design.

Forty-four states have passed laws or instituted programs that either protect water quality directly by curbing point-source pollution, or protect it indirectly by regulating an agricultural production practice associated with generation of nonpoint-source pollution. Some state laws are follow-ons to Federal clean water laws, while others respond to chronic local problems such as nitrates or pesticides in groundwater. To help improve water quality, states may institute controls on inputs or practices and land use, offer economic incentives, and provide for educational programs.

Difficulty in measuring the stringency of environmental regulations is a limitation for analysis of whether state environmental regulations affect the location or expansion decisions of hog producers. Environmental indices that rank states on level of environmental protection are of limited use for agricultural analysis, particularly indices that predate rapid growth in an industry like swine production. The components underlying the indices do not relate specifically to agricultural industries or to environmental problems spawned by concentration in livestock production. For example, one index assigns states to four categories of environmental protection—environmentally progressive, struggler, delayer, or environmentally regressive—in 1990 and 1994. While this ranking highlights the potential for states to move up or down in environmental protection, it does not take into account environmental problems that did not even exist a few years ago. Recent research has started improving these indexes.

Specificity can add stringency to regulation. For example, states may develop regulations specific to an industry to give more regulatory attention to a perceived problem. However, specific regulation can also reflect efforts to stave off even more stringent regulation—known as a "no more stringent than" law. By enacting a legislative prohibition on future, more stringent, environmental regulations, states may be seeking to encourage facilities to locate there.

Regulations that include reporting requirements and that indicate some accountability for firms' actions have greater stringency than those that simply recommend best management practices. The number of permit bars or blocks that preclude violators from obtaining new permits until problems have been addressed is a better indicator of regulatory stringency than the number of penalties, since penalties may or may not be imposed for environmental infractions due to lack of enforcement capability or funding.

Another indicator of stringency is sufficient resources and staff allocated to enforcement by state agencies. Rational enforcement agents should be optimizing some weighted function of their agency's political interests and the general social welfare. Level of enforcement may not significantly affect firms' locational response to regulatory restrictions if expected costs of noncompliance are less than expected costs of compliance. In fact, very few operations in any state have been penalized in the past, and the penalties were generally small compared with overall costs of the operation.

Even with Federal laws like the Clean Water Act and the Clean Air Act, enforcement is normally delegated to state agencies. However, government agencies don't usually take on the task of regulation in advance of a problem, so regulation generally lags the appearance of environmental damage. Areas that develop the most stringent regulations will tend to be those that already have environmental problems, that have the most production with potential to cause environmental problems, or that have production close to population centers where citizens are concerned about potential problems.

No matter how stringent, sometimes state laws are ineffective because they are applied unevenly. For example, a study commissioned by the Indiana legislature reveals that many of the state's environmental regulations only apply to new operations, because older operations are "grandfathered in"—i.e., not subject to the new rules. However, grandfathering may be politically necessary to get environmental legislation passed.

Does Environmental Regulation Influence Location?

Conjecture is that animal industries tend to move to areas with a lax environmental regulatory structure. Lax structure can mean either no effort to enforce, or lack of institutional capabilities or financial resources to enforce. It may also mean an absence of perceived need for environmental regulation or enforcement. Locational shifts may involve moves between geographic areas, or clustering within a given area.

Clustering may occur in areas where existing climatic and geologic factors such as slope or rainfall make it less costly to comply with standardized regulations. For example, protecting a lagoon from overflowing is easier and is lower cost on land that is not a floodplain or where the distribution of rainfall is not problematic. Clustering has a cumulative effect in lowering costs, with processing facilities drawing in more production facilities that may in turn draw in more

processing, allied agribusiness, and input suppliers.

Studies examined indicate that hog operations locate wherever they can function on a large scale and realize unit-cost savings. Compliance costs for environmental regulations were only a minor consideration in the past, but this could change with likely stricter future regulations governing larger producers. Mitigating environmental problems in areas of expanding hog production can nevertheless be consistent with profitable operations.

Producers can lower compliance costs by altering practices. For example, modifying the cropping system can increase the capacity of farmland to absorb nitrates and phosphorous from manure, and feed supplementation with phytase reduces the amount of phosphorous excreted by hogs. Since much of the best technology for dealing with pollution from hogs is expensive, clustering many large operations in an area can make use of the technology more cost-effective. For example, a custom applicator for manure facilitates injecting manure into the soil locally rather than transporting it long distances. Joint ownership and use of such machines increases cost-effectiveness and reduces compliance costs for all.

One somewhat surprising finding is that stringent regulation—which doesn't necessarily imply stringent enforcement—may actually attract industries to states. Since specificity in regulations makes the rules clear for industries planning for future operations, the uncertainty of having to deal with regulations as they develop is reduced. However, the more a state spends on environmental *enforcement*, the less likely a given firm will locate in that state. Differences in level of enforcement among nearby states, especially if competitors already operate in the area, may also affect location decisions. For example, new operations might be disadvantaged if they incur costs not imposed on existing businesses.

Additional research is needed to estimate the potential impacts of new state and Federal water quality regulations on the animal production sector. For example, compliance costs for the Unified National Strategy for Animal Feeding Operations—an initiative announced by USDA and EPA—will be one subject for future research. Research in the future also will explore the relationship between type, size, and location of operation, and unit costs for compliance with particular environmental laws.

Location decisions, while important at the state level, also have an international context, with concerns about large production companies shifting investment outside the U.S. Production in other countries would still face variations in environmental regulations. The European Union experience with its Nitrate Directive is instructive, demonstrating that limiting producers' options with strict regulation of nitrate levels in an area with a limited land base has the potential to greatly reduce the scale and to influence the location of animal production. For example, an EU hog producer has built production facilities in five U.S states, in part because of EU environmental constraints.

Harmonization of environmental standards across international boundaries is a contentious topic in World Trade Organization (WTO) discussions, because of possible effects on the location of agricultural businesses, as well as geographic dispersion of the emissions. If uniform environmental regulations were to raise costs of production in some countries so high that they could no longer be competitive in export markets, producers in those countries would likely appeal for an exemption, and some countries might be willing to enhance their export competitiveness at the expense of the environment.

With its abundant land base, the U.S. is generally better able to accommodate compliance with environmental regulations. However, certain localities within the U.S.—e.g., where manure disposal is a problem (see map on page 17)—could have difficulty complying with stricter environmental regulations. AO

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September Releases—USDA's Agricultural Statistics Board

The following reports are issued electronically at 3 p.m. (ET) unless otherwise indicated.

September

1 *Dairy Products Prices (8:30 am)*
Dairy Products
5 *Egg Products*
Poultry Slaughter
Crop Progress (4 pm)
6 *Weather – Crop Summary*
Broiler Hatchery
8 *Dairy Products Prices (8:30 am)*
Vegetables
11 *Crop Progress (4 pm)*
12 *Cotton Ginnings (8:30 am)*
Crop Production (8:30 am)
Weather – Crop Summary
13 *Broiler Hatchery*
Turkey Hatchery
15 *Dairy Products Prices (8:30 am)*
Cattle on Feed
Milk Production
18 *Hop Stocks*
Crop Progress (4 pm)
19 *Weather – Crop Summary*
20 *Broiler Hatchery*
Cold Storage
21 *Citrus Fruits*
Potatoes
22 *Dairy Products Prices (8:30 am)*
Catfish Processing
Chickens & Eggs
Hogs & Pigs
Livestock Slaughter
NASS Facts Newsletter (4 pm)
25 *Cotton Ginnings (8:30 am)*
Crop Progress (4 pm)
26 *Weather - Crop Summary*
27 *Broiler Hatchery*
28 *Agricultural Prices*
Peanut Stocks & Processing
29 *Dairy Products Prices (8:30 am)*
Grain Stocks (8:30 am)
Small Grains Summary (8:30 am)

Special Article

Transportation Bottlenecks Shape U.S.-Mexico Food & Agricultural Trade

Anyone visiting Laredo, Texas quickly notices that this bustling city is a major gateway for trade between the U.S. and Mexico. In fact, it is the busiest of all ports of entry for commercial trade along the more-than 2,000-mile U.S.-Mexico border. Delays are common, with tractor-trailers lined up waiting to carry cargo across the border. South of the border, queues are several miles long with Mexican trucks waiting to cross into the U.S.

The high volume of traffic at Laredo and other border crossings symbolizes the dynamic and fast-growing trade relationship between the U.S. and Mexico, spurred by economic growth on both sides of the Rio Grande and, beginning in 1994, by the progressive elimination of numerous tariff and quota barriers as part of the North America Free Trade Agreement (NAFTA).

Food and agricultural trade between the U.S. and Mexico has been a part of this growth, more than doubling in the last 10 years to a forecast $10.9 billion in fiscal 2000. Mexico is now the fourth-largest U.S. export market for farm products ($5.9 billion) and ranks third as a source of farm imports ($5 billion). The trade is driven by three factors, each associated with a distinctive transportation pattern:

- Income growth in Mexico, with the exception of the 1995 recession, has been significant, averaging about 5 percent per year since implementation of NAFTA. More and more of Mexico's 98 million people have moved into the middle to upper classes, now estimated at about 30 million. Many of them reside in the industrial heartland, the "golden triangle"—an area outlined by Mexico's three largest cities: Monterrey, Mexico City, and Guadalajara. This is also where a good deal of value-adding activity takes place, such as transforming raw agricultural imports like feedgrains and oilseeds into meat products targeted for domestic consumption. U.S. products destined for the region move primarily by truck and, to a much lesser extent, by rail along the Laredo-Mexico City corridor. Some bulk commodities move through the U.S. seaports of Galveston and New Orleans to Veracruz and other Mexican seaports, then to interior locations.
- Income growth in the U.S. has led to dietary diversification and to demand for a stable year-round supply of certain foods. Mexico's climate and investment in irrigation have enabled an export-oriented industry in its northwest to develop to meet U.S. demand for off-season fruits and vegetables. A large share of Mexico's horticultural product exports moves northward by truck primarily through Nogales, Arizona, and to a lesser extent through the Rio Grande Valley, including the Texas towns of Hidalgo, McAllen, and Mercedes. The products are stored in warehouses and distributed to grocery chains and markets throughout the U.S. This trade is seasonal, peaking in November-March.

William T. Coyle

- Development of the *maquiladora system*—assembly of foreign component parts for re-export—is based on inexpensive Mexican labor, plentiful U.S. and other foreign capital, and a policy environment encouraging investment and trade. The system, a result of comparative advantage and government policy, employs 1.2 million workers in 3,521 plants, according to a March 2000 report by U.S.-Mexico Chamber of Commerce, and it accounts for about 40 percent of Mexico's total exports. Three-quarters of the plants are in Mexico's six border states with the U.S.

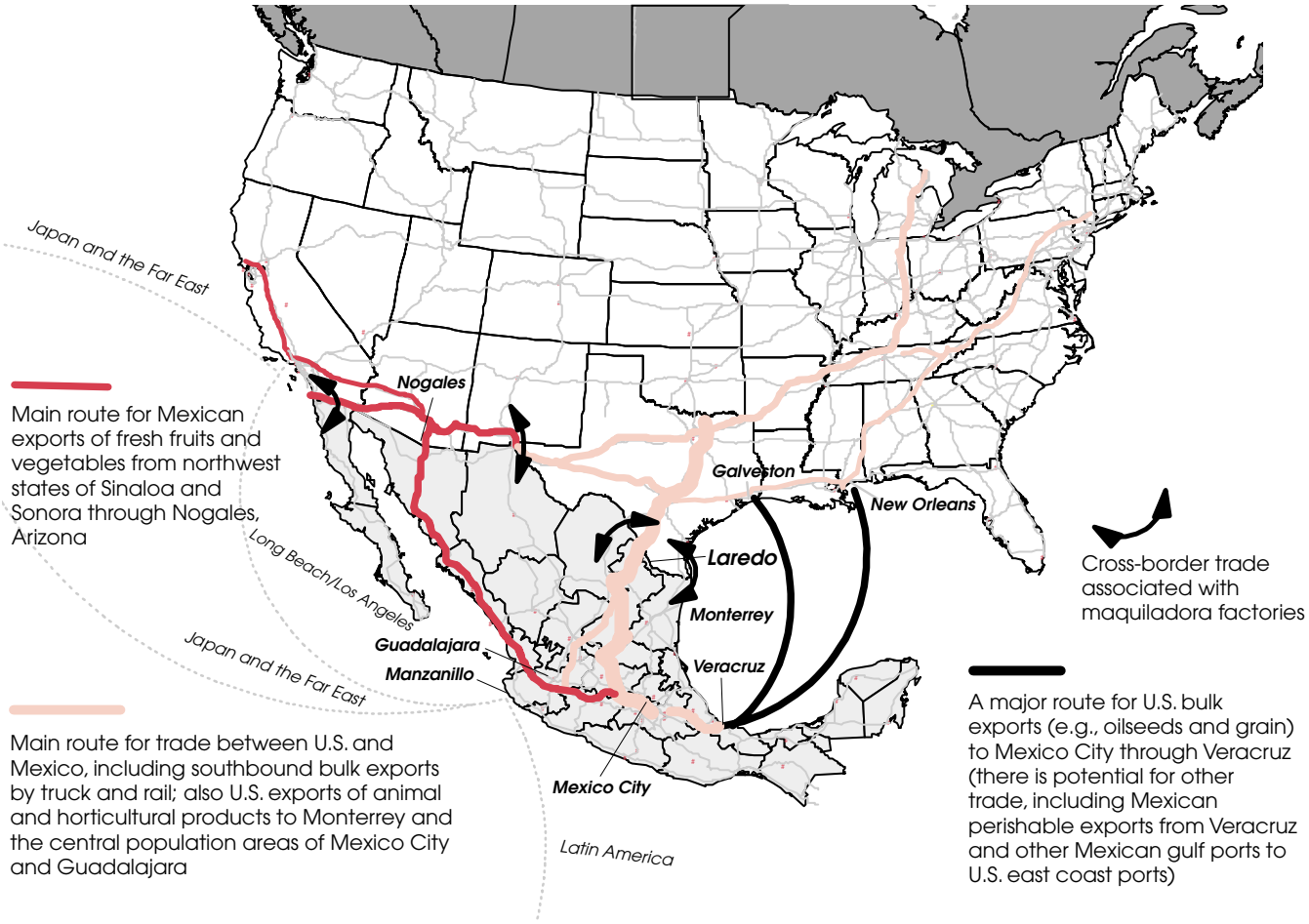
  About 30 percent of the *maquiladora* factories are engaged in textile and apparel manufacturing and are important buyers of U.S. cotton, textiles, and yarn. These border areas, where population and income growth has been faster than in other parts of the country, in turn provide markets for U.S. food and agricultural products. Because much of the output is exported to the U.S., the *maquiladora* system is closely linked to the performance of the U.S. economy. The system is a large contributor to traffic congestion along the border close to where many of the plants are located, particularly at El Paso-Ciudad Juarez, Laredo-Nuevo Laredo, San Diego-Tijuana, and Brownsville-Matamoros.

Rising trade has led not only to congestion but also, in some instances, to costly delays at the border and elsewhere. Particularly vulnerable are time-sensitive perishable products that make up a sizable share of both south- and northbound food and agricultural trade.

Food and agricultural trade between the U.S. and Mexico grew briskly in the 1990's despite border and infrastructure constraints. During this time, growth in U.S. agricultural exports to Mexico outstripped growth in shipments to almost all other

Special Article

Main Trade Routes for U.S.-Mexico Trade in Food and Agricultural Products



Source: Rob Harrison, "Harmonizing Truck Transportation," in Policy Harmonization and Adjustment in the North American Agricultural and Food Industry—Proceedings of the Fifth Agricultural and Food Policy Systems Information Workshop, University of Guelph, February 2000.

Economic Research Service, USDA

major U.S. foreign markets, some of which are more developed than Mexico, including the European Union (EU), Japan, Taiwan, and South Korea. While growth in exports to China, Southeast Asia, and South America was more rapid in the mid-1990's, it was not sustained in these markets because of the effects of financial crises, recession, and supply-side factors on import demand (e.g., record crops in China). Growth in food and agricultural exports to Canada and Mexico was roughly equal; growth in total U.S. exports to Mexico was significantly faster than to Canada in spite of a much more integrated and seamless U.S.-Canada transportation system.

More than 45 percent of the food and agricultural products now crossing the U.S.-Mexico border is perishable—about three-quarters of northbound and one-fifth of southbound food and agricultural trade. This trade includes fresh and frozen fruits and vegetables as well as chilled and frozen dairy, livestock, and poultry products. U.S.-Mexico two-way perishable trade in 1998-99 was larger than with any other U.S. trading partner, slightly more than U.S.-Canada and more than double the volume with the EU and with Japan.

Extensive trade in perishables is a sign of a sophisticated transportation system. Refrigeration requirements and, in some cases, the short shelf-life of perishable products demand more intensive management, greater speed in marketing, and an unbroken cold chain from point of production to point of consumption.

Behind Border Congestion

Under NAFTA, trucks were to eventually be able to travel freely throughout member countries, as regulations that limited truck movement were eliminated. But the prohibition of reciprocal truck access continues because of U.S. concerns about safety shortcomings in Mexican trucking (overweight trucks, lack of operational logs, and no limits on number of hours driven per

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shift). Long-haul U.S. and Mexican trucks whose cargo is destined for locations deep within each country cannot simply drive across the border to destinations beyond the commercial zone (typically 20 miles beyond the border or covering several counties). Instead, U.S. and Mexican truckers must deliver their trailers to the border, and hire short-haul "drayage" tractors to pull their trailers across the border. Long-haul trucks on the other side then pick up the trailers and take them to their destination. Since about 80 percent of the value of U.S.-Mexico trade moves by truck, continuation of the complicated three-step transfer system is probably the main contributor to border congestion.

Such a system, particularly along the Texas-Mexico border where much of the long-haul transferring takes place, increases cross-border traffic. For example, almost half of the 127,863 trucks crossing at Laredo and nearby Colombia Solidarity International Bridge in June 1999 pulled empty trailers or none at all.

The truck-crossing system also substantially increases the time needed to cross. For example, delays at the Laredo border range from 4 to 23 hours, according to analysis by USDA's Foreign Agricultural Service in May 1999. Removing border bottlenecks would reduce travel time between Chicago and Monterrey, Mexico by as much as 40 percent, according to estimates by Texas A&M International University.

Some north-bound delays result from efforts to interdict drugs and undocumented immigrants. U.S. drug officials estimate more than 60 percent of cocaine entering the U.S. comes through Mexico. And according to the Immigration and Naturalization Service, more than half of the estimated 275,000 annual illegal immigrants to the U.S. come from Mexico. Other delays arise from inspections by USDA's Agricultural Marketing Service, its Animal and Plant Health Inspection Service, and the U.S. Food and Drug Administration. U.S.-Mexico food and agricultural trade is among the most inspected because of the high volume of food and agricultural trade, especially perishable products.

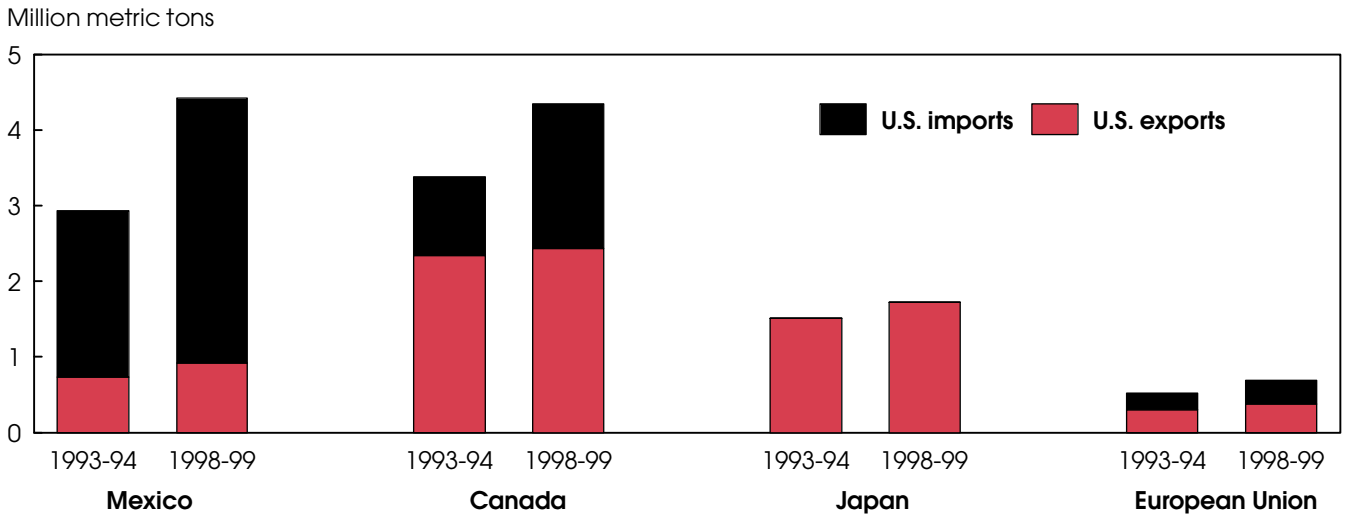
Inadequate infrastructure is also a factor at the border, as well as in some parts of Mexico, increasing transit times and shipping costs. Based on World Bank data, Mexico's roads and rail system are less developed than those in the U.S. and Canada. Mexico's road system is not nearly as comprehensive as the U.S. system, as measured by roads per square kilometer, and provides less service as measured by road length per capita.

Overcoming Obstacles

Bottlenecks at the border and inadequate infrastructure are, in effect, a tax on trade, raising the cost of doing business with Mexico through delays and through degradation of fresh products. However, a broad spectrum of incremental measures is expanding the capacity and efficiency of the increasingly integrated U.S.-Mexico transportation system, reducing the effects of constraints, and allowing the system to accommodate trade growth.

Increasing the throughput of trucks at the border can be accomplished in a number of ways: through expansion of physical facilities at crossing points, deployment of more customs personnel, expansion of operating hours, application of new technologies for checking cargo, and automation of paperwork required for exports and imports.

Fastest Growth in U.S. Perishable Product Trade Is Across U.S.-Mexico Border



Average of 2 calendar years. Perishable products include eggs, butter, cheese, bull semen, fresh and frozen fruits and vegetables, chilled and frozen meat and poultry, fruit juices, wine, and cut flowers and nursery products.

Economic Research Service

The Maquiladora System

Much of the traffic across the U.S.-Mexico border is generated by the maquiladora system. Maquiladora activities largely involve manufacturing plants in Mexico, which assemble products using U.S. or other foreign components. Many of the products of these factories are destined for consumption in the U.S. market, and therefore become U.S. imports. The system began in 1965 when Mexico relaxed strict controls on foreign investment, customs, and immigration. It was formalized into law in 1971 under the Border Industrialization Program (BIP).

A large share of maquiladora trade is automobiles and parts, electrical components, and other consumer goods. U.S.-Mexico maquiladora trade is primarily between states on either side of the U.S.-Mexico border, and between the Mexican border states and the northeastern U.S. (industrial sector). Traditional U.S.-Mexico trade, by contrast, is more diverse in terms of product origins and destinations, and is usually shipped further into the interior of Mexico or the U.S. Traditional trade consists of products destined for consumption or use as input components for manufacturers of locally consumed products within either Mexico or the U.S.

More than three-quarters of maquiladora plants are located in the six Mexican states along the U.S. border. This tends to concentrate maquiladora system shipping within the border region. Some maquiladora factories produce partial assemblies in Mexico and final product assembly is performed in the cross-border U.S. city. This commonly occurs along the Texas-Mexico border, for example, between the cities of El Paso, Texas, and Ciudad Juarez, Chihuahua. There are also situations where partial assemblies are prepared in Mexico and shipped to a corresponding U.S. production plant in interior states such as Michigan or Illinois.

One of the fastest growing maquiladora sectors is textile and apparel manufacturing. In the last decade, soaring bilateral trade has positioned both Mexico and the U.S. among the world's largest exporters of processed cotton products, creating the world's largest cotton textile trade relationship. Trade between the two countries now accounts for almost 10 percent of all world trade in cotton textiles. Mexico replaced China in 1995 as the largest source of imported cotton textiles for the U.S., and by 1999 Mexico's share of U.S. imports reached 20 percent. During this period, Asia's share dropped from about 60 to 45 percent.

A relatively recent trend is the establishment of maquiladora factories within the interior states of Mexico. As a result, more and more maquiladora trade is shifting from along the border to interior locations. Facilities located in coastal areas like the Yucatan are more accessible by water-borne transportation than over land.

Binational Border Transportation Planning and Programming Study, Task Force 8 Report, Current Trade and Passenger Flow Data, Final Report, *La Empresa Barton-Aschman, May 8, 1997; and Steve MacDonald (ERS)*

The speed of processing and inspection is particularly important in Nogales, since a large share (60 percent) of U.S. fresh fruits and vegetables from Mexico crosses at this point. Recent investments have expanded parking capacity at the Customs compound and reorganized the flow of trucks to help handle heavier traffic. The Customs compound, originally designed to handle 400 northbound trucks per day, now handles 1,000 to 1,400 daily.

To alleviate growing congestion on both sides of the border at Laredo, Texas, a fourth bridge was recently completed within the city limits, and is used exclusively for commercial traffic. This new bridge has significantly reduced the long lines of tractor-trailers, sometimes stretching back as far as 4 or 5 miles along Interstate 35. There is already discussion of a fifth Laredo bridge. But congestion may be due more to inefficient use of bridges and failure to utilize them for much of the day. And questions have arisen over the rationale for building new bridges in Laredo, when the problem is actually that nearly half of all crossings there involve trucks pulling empty trailers or no trailers at all.

Mexico's infrastructure has improved somewhat in recent years, with substantial public investment in highway construction and development of strategic nodes and feeders to connect regional and state road networks. But recently developed modern toll roads in Mexico are underutilized because the tolls are too expensive for widespread commercial use.

In addition to toll roads, much work has been done to modernize North-South highway corridors by widening roads to include safe shoulders. Nevertheless, some sections have minimal or non-existent shoulders and are in poor repair. These highway sections are scheduled to be modernized by 2001. While rail track is generally in good condition, Mexico's railroads are undercapitalized due to being state run for many years. The situation is changing since privatization was initiated in 1995.

New technology is reducing inspection times at the border. In 1998, the U.S. Customs Service began using a fixed X-ray unit that allows agents to scan an entire truck, reducing the need to unload suspicious cargo. In 1999, officials at Nogales started using a hand-held system which performs about 200 X-ray inspections a day, compared with 60 for fixed-location machines.

Mexico is also upgrading inspection procedures through its Customs Modernization Program to reduce the time for full inspections of southbound trucks from 90 minutes to 10 minutes or less. This program includes enhancement of inspection equipment at major points of entry; overhauling customs computers; and simplifying customs clearance, including the use of a single NAFTA customs document.

Mexico is installing X-ray equipment, both mobile and fixed units like those on the U.S. side. Top priority is being given to crossings at Nuevo Laredo and Colombia across from Laredo, Texas, and at Ciudad Juárez across from El Paso, Texas. The gulf coast port of Veracruz, the Pacific coast port of Manzanillo, and the Mexico City airport are also priorities.

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U.S.-Mexico Trucking Provisions under NAFTA

Transportation issues were a minor section in the North American Free Trade Agreement (NAFTA) described in Chapter 12 dealing with cross-border trade in services. Maritime services were not addressed because of prohibitions in the Mexican and Canadian constitutions. Since there were few restrictions on trucking between the U.S. and Canada, the main NAFTA trucking issue was access of U.S. and Canadian truckers to Mexico's interior and vice versa. At the time of the agreement, access by Mexican carriers to the U.S. and by U.S. truckers to Mexico was limited to commercial zones about 20 miles inside the border (sometimes more—up to 100 miles). All other shipments crossing the border had to be transferred to local drayage firms, for movement across the border, and then to domestic trucking companies for movement into the interior.

Provisions of NAFTA allowed investment in trucking firms in other NAFTA countries as long as those firms were engaged in intra NAFTA trade. U.S. and Mexican trucking firms were to be allowed to enter freely into the border states of the other country in December 1995. And by January 1, 2000, Mexican and U.S. trucking firms were to be allowed free access to any part of the other country. Trucks were to meet height and width, safety and driver licensing requirements of the other country. Nevertheless, truck access currently is not allowed.

Chronology of events:

Dec. 14, 1995—Letter from U.S. trucking interests to President Clinton requests delay in opening U.S. border to Mexican truckers because of safety concerns:

- Mexican trucks are too heavy (120,000 gross vehicle pounds, compared with 80,000 in the U.S.);
- Mexican trucks are too old (15 years, compared with 5 years in the U.S.);
- Mexican trucks are not required to have front brakes and anti-lock systems;
- Mexican truck drivers are not required to keep logbooks and are not restricted to 10 hours of driving per day.

December 15, 1995—Teamsters Union files suit to delay opening of the border.

December 18, 1995—Federico Peña, then U.S. Transportation Secretary, announces an indefinite delay in opening the border while safety issues are addressed.

February 15, 1996—President Clinton announces a 1-year ban on implementation of free trucking access in border states between the two countries.

September 1998—Mexico requests a binding arbitration panel from the NAFTA Commission to push the U.S. to open its border to Mexican trucks.

October 1999—President Clinton repeats opposition to open access for trucks because of unresolved safety issues.

Crossing the U.S.-Mexico Border in Due Time

Step	Truck (tractor-trailer) movement	Time
1	U.S. long-haul tractor drops off trailer (cargo) at forwarder on U.S. side	
2	Long-haul tractor picks up another U.S. trailer(cargo) at local terminal for return trip north	
3	Forwarder classifies cargo; arranges for transfer of cargo to Mexican trailer; arranges for inspections by SAGAR (Mexico's Ministry of Agriculture); for U.S. trailers entering Mexico, bond is purchased to secure return	Up to 2 hrs.
4	Forwarder requests U.S. "drayage" company to move trailer to SAGAR inspection point (drayage firms use tractors designed for very short distances)	
5	SAGAR inspection for diseases such as avian influenza in poultry and poultry products, or pests such as oriental fruit moth in apples.	30 min to 2 hrs.; after 4 pm must wait for next day
6	After passing physical inspection, documents are reviewed a second time	Few min. to several hours
7	Cargo released to forwarder	
8	Import documents prepared, and duties and fees paid by Mexican broker	3 to 5 hrs.
9	Forwarder arranges for another drayage tractor to pick up trailer from inspection point	15 to 30 min.
10	Trailer transferred across border to Mexico	15 min. to 3 hrs.
11	Trailer presented to Mexican customs; 10 percent of loaded trucks subjected to intensive "red light" inspection; red light inspection must be cleared in 3 hours	3 hours
12	All red light shipments subjected to secondary review (about 10 percent of shipments)	1 to 3 hrs.
13	Once cleared, truck proceeds to transfer lot to await Mexican long-haul tractor; perishables normally do not wait more than a couple of hours	Up to 2 hrs.
14	Mexican long-haul tractor moves trailer to kilometer 26 checkpoint where Mexican Customs checks cargo documentation to ensure all clearances are in order and clears cargo for entry into interior of Mexico	
	Typical total time	**4 to 23 hours**

Source: USDA/Foreign Agricultural Service, voluntary Gain Report (#MX9058), May 7, 1999.

Economic Research Service, USDA

A computerized trade data system is being developed that will permit simultaneous filing of import data at multiple government agencies. This will reduce the redundancy of paperwork required by Customs, USDA, and other government agencies with jurisdiction over imports or exports.

Mexican and U.S. customs authorities have harmonized hours of operation at some crossings, but operating practices vary widely from one crossing location to another. Some high-volume crossings such as Laredo and Otay Mesa in California operate every day. Others are closed on Sunday and have reduced hours on Saturdays and holidays. Part of this variability arises because certain ports specialize as crossings for certain cargoes, such as fruit and vegetable imports (Nogales), Maquiladora trade (Otay Mesa, El Paso, Laredo, Brownsville), and long-haul trade (Laredo).

Some observers assert that operating hours for border crossings need to expand to a 24-hour-a-day, seven-day-a-week schedule. In Laredo, hours were extended until midnight as an attempt to ease peak-hour congestion, but few trucks took advantage of the later hours because warehouses and freight forwarders were not operating at those hours.

Developing Free Trade Zones & Alternative Routes

Development of free trade zones on both sides of the border helps circumvent congested border crossings. Instead of being inspected and stored at the border, goods proceed to a bonded warehouse at a free trade zone site where products are cleared by customs and other agencies. Duties are deferred until imported goods are assembled or leave the site.

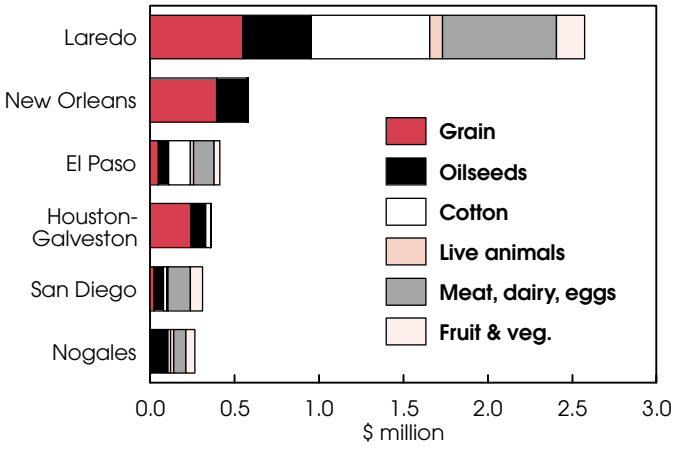
In the U.S., the San Antonio "Kelly USA" Intermodal Facility—already a global transportation hub—is slated to become a free-trade zone. The facility has potential to relieve congestion at the border ports of entry at Laredo, Eagle Pass, and El Paso, because of its location at the intersection of highways I-35 (north-south) and I-10 (east-west).

Another such site, ADNPlus Industrial Multiport, is being developed as a free trade zone in Monterrey; it allows for the shifting of customs clearance for some southbound freight from the congested Laredo crossing to a location 140 miles south. The site covers 44 million square feet and is adjacent to the Monterrey airport.

The Multiport park will have terminals for agricultural products, including a grain elevator, as well as for a range of other freight, including cars, chemicals, and steel products. It also will provide intermodal services for railroad, truck, and air cargo carriers. Other free trade zones include the Alliance Airport in Fort Worth, Texas.

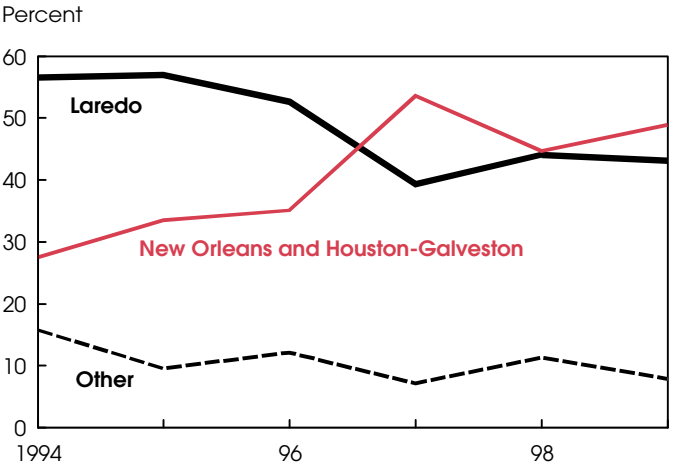
Development of alternative land and sea routes is yet another way to reduce delays and costs. Shippers of food and agricultural products are already shifting away from Laredo, the busiest

Laredo, Texas Is Leading Port for U.S. Grain and Other Ag Exports to Mexico. . .



Selected commodities. 1998-99 average.

. . .But Its Share of Grain Exports Has Declined



Source: U.S. International Trade Commission.

Economic Research Service, USDA

port. The share of major categories of U.S. food and agricultural exports going through the Laredo Customs District has declined from 63 percent in 1993-94 to 55 percent in 1998-99. The largest declines were for cereals (exports of $1.3 billion in 1999), fresh fruit ($208 million), oilseeds ($819 million), and vegetable oils ($356 million).

For bulk commodities, like cereals and oilseeds, the shift has been away from truck and rail shipment through Laredo to ocean shipment through New Orleans and Galveston to Veracruz and other Mexican ports. For higher-value products primarily shipped by truck, the shift is to other land ports, like Brownsville and Eagle Pass (within the Laredo District), El Paso, or Nogales. Many of the ports around the Gulf of Mexico are expanding and

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upgrading facilities in anticipation of growing ocean trade between Mexico and the U.S.

Development of the Port of Manzanillo on Mexico's Pacific Coast has allowed for more Mexican food and agricultural exports to Los Angeles-Long Beach, bypassing land routes to the U.S. west coast. It has also bolstered direct shipments to Japan and other Asian destinations.

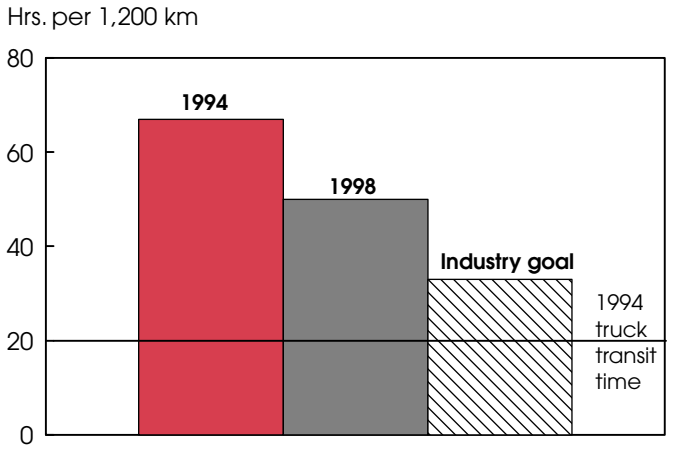
The option to adjust shipping routes depends on product perishability and the availability of lower cost alternatives. Time-sensitive products require prompt delivery, and shipping choices are limited by the urgency of reaching the final destination quickly. More storable products, like cotton, grain, and oilseeds, afford shippers more alternatives because time is usually not as critical.

Except for air transport, trucks are the most expensive mode of transportation, but they are the most flexible and better able to guarantee delivery at a particular time and place. Rail and ocean shipping are cheaper, but their dependence on links with other modes of transportation for final delivery can cause uncertainty.

Making Rail More Competitive

Rail transportation in Mexico is becoming more competitive *vis a vis* trucking, according to the proceedings of the fifth Agricultural Food Policy Systems Information Workshop (Feb. 2000). In recent decades, Mexico's national railroad, *Ferrocarriles Nacionales de Mexico*, experienced chronic operating losses and poor productivity. Its share of the nation's cargo traffic was about 20 percent in 1980 but dropped to about 10 percent by 1995. A constitutional amendment in 1995 paved the way for privatization of the system, which divided the railroads into five concessions, including three main lines: the northeast corridor from Laredo to Mexico City; the northwest corridor through Hermosillo and Nogales and Saltillo to Eagle Pass; and the ports of Veracruz and Coatzacoalcos to Mexico City. Other concessions were a Mexico City terminal and a number of shorter lines.

Transit Times for Rail Service Have Declined for the Laredo-Mexico City Corridor



Source: Barry E. Prentice, Wade Derkson, and Arnold Maltz, "Rail Harmonization in Mexico and North America: Implications for Agriculture," in Proceedings of the Fifth Agricultural and Food Policy Systems Information Workshop, University of Guelph, February 2000.

Economic Research Service, USDA

The report also indicates that improved management and upgraded equipment are reducing transit times and costs. Between 1994 and 1998, for example, rail transit times over the 1200-kilometer Laredo-Mexico City corridor declined from 67 to 50 hours, which reduces costs for U.S. grain and soybean rail shipments to Mexico City. The overall level of rail traffic between the U.S. and Mexico almost doubled between 1992 and 1998.

Greater integration of Mexico's rail system with that of the U.S., and investments in warehousing and intermodal facilities, are helping to make shipping by rail a more attractive alternative than trucking. Pre-clearance by Customs of rail traffic avoids trains having to stop at the border, which formerly was the procedure.

In 1999, the Kansas City Southern Railway Company (KCSR) formed an alliance with the Canadian National Railway, which already had merged with Illinois Central, to form the "NAFTA Railway," linking Canadian, Mexican, and U.S. shippers through the heart of the U.S. Corn Belt. KCSR was also part of the successful consortium obtaining the northeast concession, thus facilitating the interchange of freight into Mexico through Laredo. A loaded railcar in the interior of the U.S. can go directly to

Mexico's President-Elect Supports Trade

On July 2, 2000, Mexican voters elected Vicente Fox of the center-right National Action Party (PAN) to succeed Ernesto Zedillo, as president of Mexico. Fox takes office on December 1, ending seven decades of rule by the Institutional Revolutionary Party (PRI).

Fox, a former governor of the Mexican state of Guanajuato, is a businessman whose career includes running Coca-Cola's Mexico operation. In his campaign, he made a strong commitment to fiscal discipline, stronger trade ties with the U.S., and a more secure climate for foreign investment. He also promoted changes to the constitution that would allow competition in the electrical and petrochemical sectors, including privatization of Pemex, Mexico's petroleum monopoly. His support came disproportionately from the young, urban, and better-educated population, many of whom have benefited the most from the North American Free Trade Agreement.

Fox is a strong supporter of free trade and envisions the free movement of labor throughout North America by 2010. In his view, investment in education and raising labor productivity in Mexico will reduce illegal immigration to the U.S., and lay the groundwork for a free labor market throughout North America. His support for free markets in North America suggests likely support for modernizing infrastructure and facilitating trade, which could translate into reducing bottlenecks in the U.S.-Mexico transportation system.

Mexico City, compared with the three handlings needed when going by barge, ship, and truck via New Orleans, Veracruz, and finally Mexico City.

Outlook for Reducing Transport Costs

While incremental measures—streamlining and automating customs clearance, expanding border facilities, and improving infrastructure—will continue to reduce the effects of transportation bottlenecks, two factors will affect the next generation of growth in U.S.-Mexico food and agricultural trade.

One is continued development of Mexico's rail system that has been spurred on by privatization in the second half of the 1990's and by greater integration with the U.S. and Canadian rail systems. This low-cost mode of transportation, currently with a small share of the Mexican freight market, has significant potential to become more competitive with trucking, primarily for dry cargo, but also for refrigerated products. Critical to the future of rail in Mexico is investment in intermodal connections with trucking and ocean shipping services to fully realize its low-cost, long-haul advantage.

The second factor is liberalization of truck access, as agreed under NAFTA, which could challenge the rail system's competitive potential. Free truck access would dramatically increase the capacity of certain border points to process and clear cargo, thus lowering transaction costs and possibly raising trucking's already dominant share of U.S.-Mexico trade. AO

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For more information, plan on attending:

Transportation Bottlenecks in the U.S.-Mexico Food System Workshop

January 24-25, 2001
Laredo, Texas

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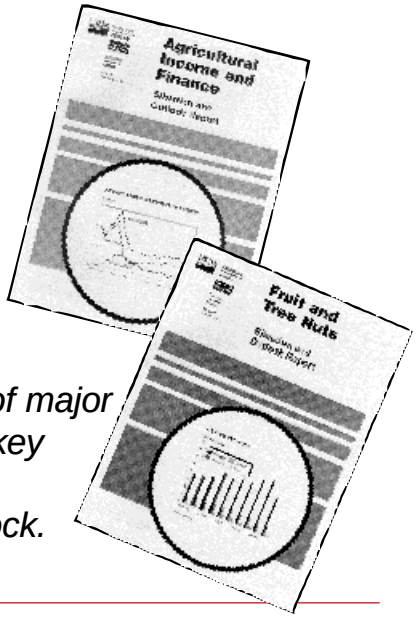

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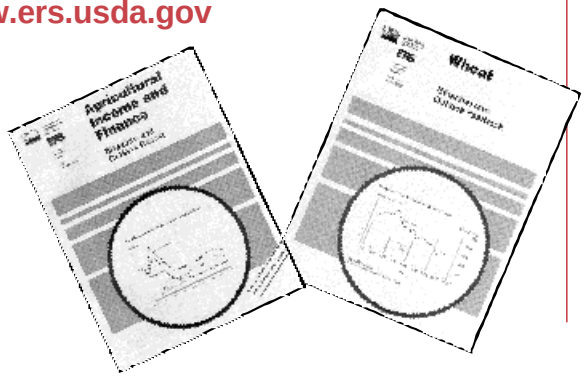

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Statistical Indicators

Summary Data

Table 1—Key Statistical Indicators of the Food & Fiber Sector

	1998	1999	2000	1999 III	1999 IV	2000 I	2000 II	2000 III	2000 IV	2001 I
Prices received by farmers (1990-92=100)	101	96	--	97	92	92	100	--	--	--
Livestock & products	97	95	--	97	96	95	100	--	--	--
Crops	106	96	--	96	88	90	101	--	--	--
Prices paid by farmers (1990-92=100)										
Production items	113	112	--	111	113	115	116	--	--	--
Commodities and services, interest, taxes, and wage rates (PPITW)	115	115	--	115	116	119	120	--	--	--
Cash receipts ($ bil.)	197	189	195	47	56	46	44	47	57	--
Livestock	94	95	100	24	24	25	25	25	25	--
Crops	102	93	94	23	32	21	19	22	32	--
Market basket (1982-84=100)										
Retail cost	163	167	--	167	169	169	169	--	--	--
Farm value	103	98	--	98	97	95	96	--	--	--
Spread	195	205	--	204	207	209	209	--	--	--
Farm value/retail cost (%)	22	21	--	21	20	20	20	--	--	--
Retail prices (1982-84=100)										
All food	161	164	168	164	165	166	167	168	168	170
At home	161	164	167	164	165	166	167	168	168	170
Away from home	161	165	169	166	167	168	168	170	170	172
Agricultural exports ($ bil.)[1]	53.6	49.0	50.0	11.6	13.6	13.3	12.0	11.2	13.2	--
Agricultural imports ($ bil.)[1]	37.0	37.4	39.0	8.8	9.6	10.1	10.2	9.1	9.0	--
Commercial production										
Red meat (mil. lb.)	45,134	46,134	46,084	11,624	11,756	11,595	11,279	11,702	11,508	11,336
Poultry (mil. lb.)	33,667	35,590	36,649	8,986	8,894	9,019	9,235	9,160	9,235	9,415
Eggs (mil. doz.)	6,658	6,912	7,072	1,728	1,786	1,754	1,743	1,760	1,815	1,770
Milk (bil. lb.)	157.3	162.7	167.5	39.8	40.4	42.6	43.1	40.8	41.0	42.6
Consumption, per capita										
Red meat and poultry (lb.)	213.5	220.4	221.3	55.4	55.9	53.9	55.0	55.7	56.7	54.9
Corn beginning stocks (mil. bu.)[2]	883.2	1,307.8	1,787.0	5,698.4	3,616.2	1,787.0	8,024.7	5,602.0	3,586.9	--
Corn use (mil. bu.)[2]	8,791.0	9,298.3	9,445.0	2,089.4	1,831.1	3,203.2	2,426.1	2,020.6	--	--
Prices[3]										
Choice steers--Neb. Direct ($/cwt)	61.48	65.56	68-70	65.12	69.65	69.32	71.59	65-67	68-72	69-75
Barrows and gilts--IA, So. MN ($/cwt)	34.72	34.00	45-46	35.70	36.29	41.14	50.43	47-49	40-42	42-46
Broilers--12-city (cents/lb.)	63.10	58.10	55-57	58.10	57.60	54.60	55.70	57-59	54-58	51-55
Eggs--NY gr. A large (cents/doz.)	75.80	65.60	63-65	66.20	63.20	63.30	62.10	63-65	65-69	60-66
Milk--all at plant ($/cwt)	15.42	14.36	12.30-12.50	14.87	13.83	11.90	12.03	12.35-12.65	12.95-13.55	11.65-12.55
Wheat--KC HRW ordinary ($/bu.)	3.27	2.92	--	2.82	2.83	2.92	2.95	--	--	--
Corn--Chicago ($/bu.)	2.41	2.01	--	1.83	1.91	2.12	2.16	--	--	--
Soybeans--Chicago ($/bu.)	6.01	4.61	--	4.40	4.53	4.95	5.20	--	--	--
Cotton--avg. spot 41-34 (cents/lb)	67.02	52.31	--	49.11	48.08	54.63	55.68	--	--	--

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Farm real estate values[4]										
Nominal ($ per acre)	703	713	740	798	844	887	926	974	1,020	1,050
Real (1982 $)	521	507	514	540	558	572	586	606	627	636
U.S. civilian employment (mil.)[5]	126.3	128.1	129.2	131.1	132.3	133.9	136.3	137.7	--	--
Food and fiber (mil.)	23.5	23.1	23.6	24.3	24.7	24.5	24.6	24.8	--	--
Farm sector (mil.)	2.0	1.9	1.8	1.9	2.0	2.0	1.9	1.8	--	--
U.S. gross domestic product ($ bil.)	5,986.2	6,318.9	6,642.3	7,054.3	7,400.5	7,813.2	8,300.8	8,759.9	--	--
Food and fiber--net value added ($ bil.)	881.8	924.8	971.4	1,077.1	1,140.8	1,216.5	1,323.3	1,367.2	--	--
Farm sector--net value added ($ bil.)[7]	71.1	75.5	73.1	78.3	75.3	86.7	84.5	74.3	--	--

-- = Not available. Annual and quarterly data for the most recent year contain forecasts. 1. Annual data based on Oct.-Sept. fiscal years ending with year indicated. 2. Sept.-Nov. first quarter; Dec.-Feb. second quarter; Mar.-May third quarter; Jun.-Aug. fourth quarter; Sept.-Aug. annual. Use includes exports and domestic disappearance. 3. Simple averages, Jan.-Dec. 4. As of January 1. 6. Civilian labor force taken from "Monthly Labor Review," Table 18--Annual Data: Employment Status of the Population, Bureau of Labor Statistics, U.S. Department of Labor. 6. The value-added data presented here is consistent with accounting conventions of the National Income and Product Accounts, U.S. Department of Commerce.

U.S. & Foreign Economic Data

Table 2—U.S. Gross Domestic Product & Related Data

	1997	1998	1999	1998 IV	1999 I	1999 II	1999 III	1999 IV	2000 I	2000 II
Billions of current dollars (quarterly data seasonally adjusted at annual rates)										
Gross Domestic Product	8,318.4	8,790.2	9,299.2	8,974.9	9,104.5	9,191.5	9,340.9	9,559.7	9,752.7	9,937.3
Gross National Product	8,305.0	8,750.0	9,236.2	8,966.6	9,097.2	9,181.8	9,327.3	9,546.3	9,745.0	--
Personal consumption expenditures	5,529.3	5,850.9	6,268.7	5,986.0	6,095.3	6,213.2	6,319.9	6,446.2	6,621.7	6,709.0
Durable goods	642.5	693.9	761.3	723.4	733.9	756.3	767.2	787.6	826.3	816.8
Nondurable goods	1,641.6	1,707.6	1,845.5	1,745.2	1,786.4	1,825.3	1,860.0	1,910.2	1,963.9	1,997.6
Food	812.2	845.8	897.8	867.2	878.1	886.6	900.4	926.1	938.4	948.0
Clothing and shoes	271.7	286.4	307.0	291.7	301.1	306.1	308.7	311.9	323.1	325.5
Services	3,245.2	3,449.3	3,661.9	3,517.4	3,575.0	3,631.5	3,692.7	3,748.5	3,831.6	3,894.5
Gross private domestic investment	1,390.5	1,549.9	1,650.1	1,590.8	1,609.8	1,607.9	1,659.1	1,723.7	1,755.7	1,848.9
Fixed investment	1,327.7	1,472.9	1,606.8	1,524.1	1,560.6	1,593.4	1,622.4	1,651.0	1,725.8	1,795.2
Change in private inventories	62.9	77.0	43.3	66.6	49.2	14.5	36.7	72.7	29.9	53.7
Net exports of goods and services	-89.3	-151.5	-254.0	-169.0	-196.1	-240.4	-280.5	-299.1	-335.2	-366.5
Government consumption expenditures and gross investment	1,487.9	1,540.9	1,634.4	1,567.2	1,595.5	1,610.9	1,642.4	1,688.8	1,710.4	1,746.0
Billions of 1996 dollars (quarterly data seasonally adjusted at annual rates)[1]										
Gross Domestic Product	8,159.5	8,515.7	8,875.8	8,654.5	8,730.0	8,783.2	8,905.8	9,084.1	9,191.8	9,308.8
Gross National Product	8,168.1	8,515.1	8,868.3	8,649.3	8,726.0	8,776.7	8,895.4	9,075.0	9,187.7	--
Personal consumption expenditures	5,423.9	5,678.7	5,978.8	5,779.8	5,860.2	5,940.2	6,013.8	6,101.0	6,213.5	6,259.6
Durable goods	657.3	727.3	817.8	766.7	782.7	810.5	826.2	851.8	898.2	889.4
Nondurable goods	1,619.9	1,684.8	1,779.4	1,716.0	1,748.5	1,765.0	1,786.1	1,818.1	1,844.8	1,860.9
Food	794.5	812.8	845.9	827.0	832.7	838.0	846.7	866.0	872.2	876.2
Clothing and shoes	271.6	292.2	318.5	298.7	313.3	316.5	322.1	322.1	337.7	342.2
Services	3,147.0	3,269.4	3,390.8	3,302.8	3,335.8	3,373.4	3,411.1	3,443.0	3,487.2	3,523.6
Gross private domestic investment	1,393.3	1,566.8	1,669.7	1,609.9	1,623.2	1,623.1	1,680.8	1,751.6	1,773.6	1,860.8
Fixed investment	1,328.6	1,485.3	1,621.4	1,539.7	1,574.0	1,607.1	1,637.8	1,666.6	1,730.9	1,793.6
Change in private inventories	63.8	80.2	45.3	69.4	48.1	13.1	39.1	80.9	36.6	60.3
Net exports of goods and services	-113.3	-221.0	-322.4	-244.9	-279.8	-314.6	-342.6	-352.5	-376.8	-416.1
Government consumption expenditures and gross investment	1,455.4	1,486.4	1,536.1	1,503.3	1,517.1	1,519.9	1,537.8	1,569.5	1,565.1	1,588.2
GDP implicit price deflator (% change)	1.9	1.3	1.5	1.1	2.3	1.4	0.9	1.3	3.3	2.5
Disposable personal income ($ bil.)	5,968.2	6,320.0	6,637.7	6,441.1	6,514.9	6,596.3	6,664.0	6,775.0	6,866.5	6,963.6
Disposable pers. income (1996 $ bil.)	5,854.5	6,134.1	6,331.0	6,219.2	6,263.7	6,306.6	6,341.7	6,412.2	6,443.1	6,497.1
Per capita disposable pers. income ($)	22,262	23,359	24,314	23,720	23,946	24,196	24,384	24,728	25,014	25,317
Per capita disp. pers. income (1996 $)	21,838	22,672	23,191	22,903	23,022	23,133	23,203	23,404	23,472	23,621
U.S. resident population plus Armed Forces overseas (mil.)[2]	268.0	270.5	272.9	271.5	272.0	272.5	273.2	273.9	274.4	274.9
Civilian population (mil.)[2]	266.5	269.0	271.0	270.0	270.5	271.1	271.7	272.4	273.0	273.5

	Annual 1997	Annual 1998	Annual 1999	1999 Jun	2000 Jan	Feb	Mar	Apr	May	Jun
Monthly data seasonally adjusted										
Total industrial production (1992=100)	130.1	136.4	142.3	141.4	146.7	147.2	148.4	149.3	150.0	150.5
Leading economic indicators (1992=100)	103.9	105.5	105.2	105.3	106.3	106.0	106.1	106.1	106.0	106.0
Civilian employment (mil. persons)[3]	129.6	131.5	133.5	133.4	135.2	135.4	135.2	135.7	134.7	135.2
Civilian unemployment rate (%)[3]	4.9	4.5	4.2	4.3	4.0	4.1	4.1	3.9	4.1	4.0
Personal income ($ bil. annual rate)	6,937.0	7,391.0	7,789.6	7,783.0	8,056.4	8,099.6	8,161.6	8,206.8	8,233.9	8,266.7
Money stock-M2 (daily avg.) ($ bil.)[4]	4,041.9	4,396.8	4,655.4	4,530.9	4,679.3	4,691.3	4,728.2	4,768.9	4,765.2	4,777.5
Three-month Treasury bill rate (%)	5.07	4.81	4.66	4.59	5.34	5.57	5.72	5.67	5.92	5.74
AAA corporate bond yield (Moody's) (%)	7.26	6.53	7.04	7.23	7.78	7.68	7.68	7.64	7.99	7.67
Total housing starts (1,000)[5]	1,474.0	1,616.9	1,666.5	1,562	1,744	1,822	1,630	1,652	1,596	1,554
Business inventory/sales ratio[6]	1.38	1.39	1.35	1.34	1.32	1.32	1.31	1.32	1.32	--
Sales of all retail stores ($ bil.)[7]	2,610.6	2,745.6	2,994.9	248.0	263.5	265.1	268.4	267.1	267.4	268.6
Nondurable goods stores ($ bil.)	1,547.3	1,609.2	1,739.9	143.9	151.0	153.0	155.8	155.9	156.6	157.7
Food stores ($bil.)	423.7	435.4	458.3	37.7	38.8	39.1	39.6	40.2	40.1	40.4
Apparel and accessory stores ($ bil.)	119.6	127.0	135.1	11.3	11.3	11.7	11.8	11.7	11.8	11.7
Eating and drinking places ($ bil.)	254.1	266.4	285.4	23.7	25.2	24.7	25.4	25.4	25.3	25.4

-- = Not available. 1. In October 1999, 1996 dollars replaced 1992 dollars. 2. Population estimates based on 1990 census. 3. Data beginning January 1994 are not directly comparable with data for earlier periods because of a major redesign of the household survey questionnaire. 4. Annual data as of December of year listed. 5. Private, including farm. 6. Manufacturing and trade. 7. Annual total. *Information contact: David Johnson (202) 694-5324*

Table 3—World Economic Growth

	Calendar year									
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
	Real GDP, annual percent change									
World	1.8	1.5	3.0	2.7	3.5	3.4	1.8	2.7	4.1	3.3
less U.S.	1.5	1.1	2.7	2.7	3.5	3.0	0.9	2.2	3.6	3.5
Developed economies	1.7	0.8	2.7	2.2	3.1	3.0	2.0	2.6	3.6	2.8
less U.S.	1.1	0.0	2.1	2.0	2.9	2.3	0.9	1.7	2.8	2.7
United States	3.1	2.7	4.0	2.7	3.6	4.4	4.4	4.2	5.3	3.0
Canada	0.9	2.3	4.7	2.8	1.5	4.4	3.3	4.5	4.5	2.6
Japan	1.0	0.3	0.7	1.4	5.2	1.6	-2.5	0.3	1.4	1.9
Australia	2.4	3.8	5.2	3.8	4.4	4.1	5.0	4.4	3.8	3.4
European Union	1.1	-0.5	2.7	2.3	1.6	2.5	2.7	2.3	3.4	3.1
Transition economies	-10.2	-6.0	-7.9	-1.1	-0.7	1.7	-1.3	2.7	4.9	2.7
Eastern Europe	-1.3	1.6	3.9	5.7	3.9	3.2	2.5	2.5	4.4	4.5
Poland	3.1	4.3	5.1	7.0	6.0	6.8	4.8	4.0	5.2	5.3
Former Soviet Union	-13.8	-9.6	-14.1	-5.4	-4.0	0.5	-4.2	2.8	5.3	1.2
Russia	-14.5	-8.7	-12.6	-4.1	-3.4	0.9	-4.6	3.3	6.0	0.9
Developing economies	5.3	5.8	6.3	5.2	5.8	5.4	1.2	3.3	5.7	5.6
Asia	7.7	8.0	8.8	8.3	7.5	6.0	0.4	6.2	7.0	6.6
East Asia	9.4	9.2	9.7	8.8	7.8	7.0	2.0	7.5	7.9	6.9
China	14.2	13.5	12.6	10.5	9.6	8.8	7.8	7.1	8.3	8.5
Taiwan	7.5	7.0	7.1	6.4	6.1	6.7	4.6	5.7	6.5	5.7
Korea	5.4	5.5	8.2	8.9	6.7	5.0	-6.7	10.7	8.0	5.2
Southeast Asia	5.6	7.7	7.9	8.1	7.1	4.7	-6.1	3.5	5.3	5.8
Indonesia	7.2	7.3	7.5	8.2	7.8	4.7	-13.2	0.7	4.0	6.3
Malaysia	7.8	8.3	9.2	9.5	8.6	7.8	-7.4	5.5	8.3	6.1
Philippines	0.3	2.1	4.4	4.7	5.8	5.2	-0.5	3.2	3.6	4.2
Thailand	8.1	8.4	8.9	8.8	5.5	-0.4	-10.2	4.2	5.5	6.4
South Asia	5.7	4.5	7.1	6.9	7.0	4.9	5.3	5.6	6.4	6.5
India	5.4	5.0	8.1	7.4	7.7	5.7	5.6	6.2	7.0	7.0
Pakistan	7.8	1.9	3.9	5.1	4.7	-0.4	3.7	3.0	4.0	4.5
Latin America	3.4	4.3	5.3	1.3	3.6	5.1	1.9	0.0	4.1	4.3
Mexico	3.6	1.9	4.5	-6.2	5.1	6.8	4.8	3.7	5.6	4.1
Caribbean/Central	8.0	4.7	4.0	3.2	3.6	5.8	6.1	3.3	4.0	4.7
South America	3.3	4.9	5.6	3.1	3.3	4.8	1.2	-0.9	3.7	4.4
Argentina	11.9	5.9	5.8	-2.8	5.5	8.1	3.9	-3.1	2.7	4.1
Brazil	-0.5	4.9	5.9	4.2	2.8	3.2	0.1	0.8	4.2	4.6
Colombia	3.9	5.4	5.8	5.2	2.0	2.8	0.6	-4.5	3.3	3.9
Venezuela	6.1	0.3	-2.3	3.7	-0.5	6.5	-0.7	-6.3	1.1	1.5
Middle East	4.7	3.9	-0.2	3.7	4.3	4.7	2.2	-1.4	4.1	4.8
Israel	5.6	5.6	6.9	7.0	4.6	2.2	1.9	2.1	5.8	4.4
Saudi Arabia	2.8	-0.6	0.5	0.5	1.4	1.9	2.3	-1.5	1.6	3.0
Turkey	6.4	8.7	-5.2	7.8	7.0	7.5	2.8	-4.9	6.3	7.7
Africa	0.2	1.0	3.2	2.9	5.2	2.8	3.1	2.6	4.5	4.3
North Africa	2.0	0.5	3.9	1.5	6.5	2.6	5.6	3.3	5.5	4.8
Egypt	4.4	2.9	3.9	4.7	5.0	5.5	5.6	3.4	5.6	5.6
Sub-Sahara	-1.1	1.4	2.6	3.9	4.3	2.9	1.3	2.1	3.6	3.8
South Africa	-2.1	1.2	3.2	3.1	4.2	2.5	0.5	1.2	3.4	3.8
	Consumer Prices, annual percent change									
Developed Economies	3.5	3.1	2.6	2.6	2.4	2.1	1.5	1.4	1.9	2.0
Transition Economies	788.9	634.3	273.3	133.5	42.4	27.3	21.8	43.7	19.5	14.2
Developing Economies	36.1	49.8	55.1	22.9	15.1	9.5	10.1	6.5	5.7	4.7
Asia	8.6	10.8	16.0	13.2	8.2	4.7	7.6	2.5	2.6	3.0
Latin America	109.1	202.6	202.5	34.4	21.4	13.0	9.8	8.8	7.7	6.4
Middle East	26.5	26.6	33.3	38.9	26.6	25.3	26.0	20.3	16.2	9.4
Africa	47.1	38.7	54.8	35.5	30.0	13.6	9.2	11.0	9.6	6.1

-- = Not available. The last 3 years are either estimates or forecasts. Sources: Oxford Economic Forecasting; International Financial Statistics, IMF.

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Farm Prices

Table 4—Indexes of Prices Received & Paid by Farmers, U.S. Average

	Annual			1999	2000					
	1997	1998	1999	Jul	Feb	Mar	Apr	May	Jun	Jul
					1990-92=100					
Prices received										
All farm products	107	101	96	95	92	95	100	101	99	98
All crops	115	106	96	95	90	94	101	104	99	95
Food grains	128	103	91	78	85	86	86	86	84	79
Feed grains and hay	117	100	86	84	88	90	91	97	90	79
Cotton	112	107	85	89	76	79	76	78	77	80
Tobacco	104	104	103	86	109	103	90	--	--	--
Oil-bearing crops	131	107	83	75	86	88	89	92	88	80
Fruit and nuts, all	109	111	114	135	82	82	88	91	114	123
Commercial vegetables	118	121	108	104	87	106	140	135	117	113
Potatoes and dry beans	90	99	101	123	99	104	105	110	106	116
Livestock and products	98	97	95	95	94	96	100	99	100	101
Meat animals	92	79	83	81	92	95	99	98	97	97
Dairy products	102	119	110	106	90	91	91	92	93	97
Poultry and eggs	113	117	111	113	104	104	111	108	112	112
Prices paid										
Commodities and services, interest, taxes, and wage rates (PPITW)	118	115	115	115	119	119	119	120	120	120
Production items	119	113	112	111	116	115	116	116	116	116
Feed	125	110	100	97	105	102	102	105	104	101
Livestock and poultry	94	88	95	92	109	108	112	106	108	111
Seeds	119	122	121	121	121	121	124	124	124	124
Fertilizer	121	112	105	104	108	107	106	108	108	108
Agricultural chemicals	121	122	121	120	122	119	119	124	121	118
Fuels	106	84	93	96	138	129	125	124	132	134
Supplies and repairs	118	119	121	122	122	123	123	124	124	124
Autos and trucks	119	119	119	119	119	119	120	120	119	119
Farm machinery	128	132	136	136	133	138	138	139	139	138
Building material	118	118	120	121	121	122	122	122	121	121
Farm services	116	115	115	116	115	116	116	116	117	117
Rent	136	120	117	117	117	117	117	117	117	117
Interest payable per acre on farm real estate debt	105	104	106	106	108	110	110	110	110	110
Taxes payable per acre on farm real estate	115	119	120	120	123	123	123	123	123	123
Wage rates (seasonally adjusted)	123	129	135	131	140	140	140	140	140	140
Prod. items, interest, taxes & wage rates (PITW)	118	114	113	113	118	117	118	118	118	118
Ratio, prices received to prices paid (%)*	91	81	75	83	78	80	84	84	83	82
Prices received (1910-14=100)	678	643	607	604	586	604	638	644	632	619
Prices paid, etc. (parity index) (1910-14=100)	1,574	1,532	1,535	1,527	1,589	1,584	1,589	1,593	1,598	1,596
Parity ratio (1910-14=100) (%)*	43	38	36	40	37	38	40	40	40	39

-- = Not available. Values for the two most recent months are revised or preliminary. *Ratio of index of prices received for all farm products to index of prices paid for commodities and services, interest, taxes, and wage rates. Ratio uses the most recent prices paid index. Data for this table are taken from the publication *Agricultural Prices*, which is produced monthly by USDA's National Agricultural Statistics Service (NASS) and is available at http://usda.mannlib.cornell.edu/reports/nassr/price/pap-bb/. For historical data or for categories not listed here, call the National Agricultural Statistics Service (NASS) Information Hotline at 1-800-727-9540, or access the NASS Home Page at http://www.usda.gov/nass.

Table 5—Prices Received by Farmers, U.S. Average

	Annual[1]			1999	2000					
	1997	1998	1999	Jul	Feb	Mar	Apr	May	Jun	Jul
Crops										
All wheat ($/bu.)	3.38	2.65	2.55	2.23	2.54	2.59	2.57	2.59	2.50	2.34
Rice, rough ($/cwt)	9.70	8.89	6.00	8.26	5.98	5.82	5.86	5.56	5.59	5.57
Corn ($/bu.)	2.43	1.94	1.90	1.74	1.98	2.03	2.03	2.10	1.91	1.55
Sorghum ($/cwt)	3.95	2.97	2.95	2.83	3.08	3.21	3.24	3.38	3.32	2.61
All hay, baled ($/ton)	100.00	84.60	77.00	78.40	72.60	74.80	80.70	89.40	82.50	80.20
Soybeans ($/bu.)	6.47	4.93	4.75	4.19	4.79	4.91	5.00	5.19	4.92	4.48
Cotton, upland (¢/lb.)	65.20	60.20	44.90	53.80	45.90	47.90	46.00	47.30	46.40	48.30
Potatoes ($/cwt)	5.62	5.56	5.84	7.51	5.96	6.33	6.29	6.62	6.47	7.28
Lettuce ($/cwt)[2]	17.50	16.10	13.30	12.70	9.28	14.00	22.90	23.50	13.40	13.20
Tomatoes, fresh ($/cwt) [2]	31.70	35.20	25.90	25.70	23.50	30.00	40.50	27.40	24.70	21.40
Onions ($/cwt)	12.60	13.80	9.78	16.10	5.63	6.67	16.60	16.60	14.80	18.40
Beans, dry edible ($/cwt)	19.30	19.00	17.60	18.50	16.00	15.20	16.60	17.00	15.70	15.10
Apples for fresh use (¢/lb.)	22.10	17.30	21.20	16.30	21.10	20.50	19.70	18.20	16.10	16.20
Pears for fresh use ($/ton)	276.00	291.00	294.00	200.00	386.00	313.00	269.00	204.00	220.00	270.00
Oranges, all uses ($/box)[3]	4.22	4.29	5.94	7.54	3.51	3.54	4.14	4.60	4.43	3.07
Grapefruit, all uses ($/box)[3]	1.93	2.00	3.22	14.48	3.64	3.63	2.82	2.51	5.27	11.03
Livestock										
Cattle, all beef ($/cwt)	63.10	59.60	63.40	62.60	67.60	69.80	71.30	69.40	68.50	68.00
Calves ($/cwt)	78.90	78.80	87.70	89.20	105.00	109.00	111.00	107.00	104.00	106.00
Hogs, all ($/cwt)	52.90	34.40	30.30	31.60	39.90	41.80	47.30	48.50	48.60	49.20
Lambs ($/cwt)	90.30	72.30	74.50	77.00	72.00	80.20	82.60	96.40	89.70	--
All milk, sold to plants ($/cwt)	13.36	15.46	14.38	13.80	11.80	11.90	11.90	12.00	12.20	12.70
Milk, manuf. grade ($/cwt)	12.17	14.24	12.86	13.40	10.20	10.10	10.20	10.10	10.30	10.90
Broilers, live (¢/lb.)	37.70	39.30	37.10	38.00	33.50	34.90	36.50	37.00	37.00	37.50
Eggs, all (¢/doz.)[4]	70.30	66.80	62.70	59.80	68.60	57.40	65.50	52.00	62.90	57.20
Turkeys (¢/lb.)	39.90	38.00	40.80	42.00	35.70	38.20	39.80	40.40	41.60	41.90

-- = Not available. Values for the two most recent months are revised or preliminary. 1. Season-average price by crop year for crops. Calendar year average of monthly prices for livestock. 2. Excludes Hawaii. 3. Equivalent on-tree returns. 4. Average of all eggs sold by producers including hatching eggs and eggs sold at retail. Data for this table are taken from the publication *Agricultural Prices,* which is produced monthly by USDA's National Agricultural Statistics Service (NASS) and is available at http://usda.mannlib.cornell.edu/reports/nassr/price/pap-bb/. For historical data or for categories not listed here, call the National Agricultural Statistics Service (NASS) Information Hotline at 1-800-727-9540, or access the NASS Home Page at http://www.usda.gov/nass.

Producer & Consumer Prices

Table 6—Consumer Price Indexes for All Urban Consumers, U.S. Average (not seasonally adjusted)

	Annual			1999	2000					
	1997	1998	1999	Jul	Feb	Mar	Apr	May	Jun	Jul
					1982-84=100					
Consumer Price Index, all items	160.5	163.0	166.6	166.7	169.7	171.1	171.2	171.3	172.3	172.6
CPI, all items less food	161.1	163.6	167.0	167.2	170.3	171.9	172.0	172.1	173.2	173.5
All food	157.3	160.7	164.1	163.8	166.3	166.5	166.6	167.3	167.3	168.1
Food away from home	157.0	161.1	165.1	165.1	167.6	167.9	168.1	168.3	168.6	169.1
Food at home	158.1	161.1	164.2	163.7	166.3	166.4	166.5	167.5	167.3	168.3
Meats[1]	144.4	141.6	142.3	142.2	146.4	148.3	148.8	150.1	151.7	152.7
Beef and veal	136.8	136.5	139.2	138.9	144.3	145.7	147.0	148.0	149.4	149.5
Pork	155.9	148.5	145.9	146.9	150.7	153.8	153.5	155.5	157.5	159.9
Poultry	156.6	157.1	157.9	157.3	157.9	158.6	158.5	159.6	159.3	161.8
Fish and seafood	177.1	181.7	185.3	184.4	190.0	189.9	189.8	192.4	191.9	189.7
Eggs	140.0	135.4	128.1	119.5	131.7	127.1	129.5	124.1	125.9	125.5
Dairy and related products[2]	145.5	150.8	159.6	155.7	160.9	159.1	160.6	159.6	159.5	160.5
Fats and oils[3]	141.7	146.9	148.3	148.1	145.6	145.9	144.8	147.0	146.6	148.1
Fresh fruits	236.3	246.5	266.3	264.9	263.0	257.9	257.0	257.3	244.6	248.9
Fresh vegetables	194.6	215.8	209.3	206.0	211.0	212.1	213.6	219.1	217.7	216.7
Potatoes	174.2	185.2	193.1	205.0	198.1	197.9	194.9	200.4	201.7	208.3
Cereals and bakery products	177.6	181.1	185.0	186.3	186.0	186.1	187.2	188.6	187.7	189.6
Sugar and sweets	147.8	150.2	152.3	152.4	154.4	154.6	152.4	153.7	154.0	154.1
Nonalcoholic beverages[4]	133.4	133.0	134.3	134.3	138.4	138.5	137.6	137.3	137.5	138.5
Apparel										
Footwear	127.6	128.0	125.7	125.2	122.1	124.7	126.7	126.1	123.9	120.3
Tobacco and smoking products	243.7	274.8	355.8	356.0	383.0	387.3	404.4	393.5	388.5	400.7
Alcoholic beverages	162.8	165.7	169.7	169.9	173.0	173.5	173.6	173.8	174.4	175.2

1. Beef, veal, lamb, pork, and processed meat. 2. Included butter through December '97. 3. Includes butter as of January 98. 4. Includes fruit juices as of January 1998. This table is compiled with data provided by the Bureau of Labor Statistics (BLS). BLS operates a website at http://stats.bls.gov/blshome.html and a Consumer Prices Information Hotline at (202) 606-7828.

Table 7—Producer Price Indexes, U.S. Average (not seasonally adjusted)

See *Agricultural Outlook*, August 2000.

Farm-Retail Price Spreads

Table 8—Farm-Retail Price Spreads

	Annual			1999	2000					
	1997	1998	1999	Jul	Feb	Mar	Apr	May	Jun	Jul
Market basket[1]										
Retail cost (1982-84=100)	159.7	163.1	167.3	166.6	168.6	168.0	168.5	170.1	169.7	170.8
Farm value (1982-84=100)	106.2	103.3	98.3	96.9	94.0	94.7	96.7	95.9	96.1	96.9
Farm-retail spread (1982-84=100)	188.6	195.4	204.5	204.1	208.8	207.5	207.2	210.0	209.4	210.6
Farm value-retail cost (%)	23.3	22.2	20.6	20.4	19.5	19.7	20.1	19.7	19.8	19.9
Meat products										
Retail cost (1982-84=100)	144.4	141.6	142.3	142.2	146.4	145.7	147.0	150.1	151.7	152.7
Farm value (1982-84=100)	101.2	84.8	81.6	82.9	86.6	86.9	86.1	87.4	87.5	88.9
Farm-retail spread (1982-84=100)	188.6	200.0	204.7	203.1	207.8	206.1	209.5	214.4	217.6	218.1
Farm value-retail cost (%)	35.5	30.3	29.0	29.5	30.0	30.2	29.7	29.5	29.2	29.5
Dairy products										
Retail cost (1982-84=100)	145.5	150.8	159.6	155.7	160.9	159.1	160.6	159.6	159.5	160.5
Farm value (1982-84=100)	98.0	113.0	107.9	99.2	93.8	95.0	95.3	96.0	96.2	101.3
Farm-retail spread (1982-84=100)	189.3	185.6	207.2	207.8	222.8	218.2	220.8	218.3	217.8	215.1
Farm value-retail cost (%)	32.3	36.0	32.4	30.6	28.0	28.7	28.5	28.9	28.9	30.3
Poultry										
Retail cost (1982-84=100)	156.6	157.1	157.9	157.3	157.9	158.6	158.5	159.6	159.3	161.8
Farm value (1982-84=100)	120.6	126.1	119.0	123.5	108.1	113.1	118.2	119.8	120.4	121.9
Farm-retail spread (1982-84=100)	198.1	192.9	202.7	196.2	215.3	211	204.9	205.4	204.1	207.7
Farm value-retail cost (%)	41.2	42.9	40.3	42	36.6	38.2	39.9	40.2	40.5	40.3
Eggs										
Retail cost (1982-84=100)	140.0	137.1	128.1	119.5	131.7	127.1	129.5	124.1	125.9	125.5
Farm value (1982-84=100)	99.3	89.6	74.9	68.6	89.9	65.6	82.0	54.0	75.8	64.3
Farm-retail spread (1982-84=100)	213.0	222.5	223.7	211.0	206.8	237.5	214.9	250.1	215.9	235.5
Farm value-retail cost (%)	45.6	42.0	37.6	36.9	43.9	33.2	40.7	27.9	38.7	32.9
Cereal and bakery products										
Retail cost (1982-84=100)	177.6	181.1	185.0	186.3	186.0	186.1	187.2	188.6	187.7	189.6
Farm value (1982-84=100)	107.7	94.4	82.5	78.2	75.1	75.6	76.2	75.5	74.4	70.3
Farm-retail spread (1982-84=100)	187.4	193.2	199.2	201.4	201.5	201.5	202.7	204.4	203.5	206.2
Farm value-retail cost (%)	7.4	6.4	5.5	5.1	4.9	5.0	5.0	4.9	4.9	4.5
Fresh fruit										
Retail cost (1982-84=100)	245.1	258.2	294.3	292.7	288.4	283.0	282.2	282.7	267.8	272.2
Farm value (1982-84=100)	137.0	141.3	153.7	145.5	149.8	149.9	150.1	132.8	132.8	131.8
Farm-retail spread (1982-84=100)	295.0	312.2	359.3	360.7	352.4	344.5	343.2	351.9	330.1	337.0
Farm value-retail cost (%)	17.7	17.3	16.5	15.7	16.4	16.7	16.8	14.8	15.7	15.3
Fresh vegetables										
Retail cost (1982-84=100)	194.6	215.8	209.3	206.0	211.0	212.1	213.6	219.1	217.7	216.7
Farm value (1982-84=100)	118.7	124.5	118.1	122.4	95.8	109.4	126.0	136.0	125.7	123.6
Farm-retail spread (1982-84=100)	233.6	262.7	256.2	249.0	270.2	264.9	258.6	261.8	265.0	264.5
Farm value-retail cost (%)	20.7	19.6	19.2	20.2	15.4	17.5	20.0	21.1	19.6	19.4
Processed fruits and vegetables										
Retail cost (1982-84=100)	147.9	150.6	154.8	156.4	152.6	152.4	151.7	153.7	154	154.5
Farm value (1982-84=100)	115.9	115.1	113.5	114.5	113.6	113.2	113.9	113.5	113.3	113.3
Farm-retail spread (1982-84=100)	157.9	161.7	167.7	169.5	164.8	164.6	163.5	166.2	166.7	167.4
Farm value-retail cost (%)	18.6	18.2	17.4	17.4	17.7	17.7	17.8	17.6	17.5	17.4
Fats and oils										
Retail cost (1982-84=100)	141.7	146.9	148.3	148.1	145.6	145.9	144.8	147.0	146.6	148.1
Farm value (1982-84=100)	109.4	118.9	89.0	81.2	80.3	86.5	88.4	85.8	82.0	78.3
Farm-retail spread (1982-84=100)	153.6	157.2	170.0	172.7	169.6	167.8	165.5	169.5	170.4	173.8
Farm value-retail cost (%)	20.8	21.8	16.2	14.7	14.8	15.9	16.4	15.7	15.0	14.2

See footnotes at end of table, next page.

Table 8—Farm-Retail Price Spreads (continued)

	Annual			1999	2000					
	1997	1998	1999	Jul	Feb	Mar	Apr	May	Jun	Jul
Beef, all fresh retail value (cents/lb.)	253.8	253.3	260.5	259.8	270.1	270.8	272.5	274.3	278.4	279.6
Beef, Choice										
Retail value (cents/lb.)[2]	279.5	277.1	287.8	289.3	293.6	297.9	305.4	308.8	311.5	310.0
Wholesale value (cents/lb.)[3]	158.2	153.8	171.6	171.5	174.5	183.3	191.0	193.8	190.7	179.6
Net farm value (cents/lb.)[4]	137.2	130.8	141.1	138.6	146.5	154.2	158.9	153.2	149.2	144.7
Farm-retail spread (cents/lb.)	142.3	146.3	146.7	150.7	147.1	143.7	146.5	155.6	162.3	165.3
Wholesale-retail (cents/lb.)[5]	121.3	123.3	116.2	117.8	119.1	114.6	114.4	115.0	120.8	130.4
Farm-wholesale (cents/lb.)[6]	21.0	23.0	30.5	32.9	28.0	29.1	32.1	40.6	41.5	34.9
Farm value-retail value (%)	49.1	47.2	49.0	47.9	49.9	51.8	52.0	49.6	47.9	46.7
Pork										
Retail value (cents/lb.)[2]	245.0	242.7	241.5	244.3	251.0	252.8	255.5	256.2	260.3	262.3
Wholesale value (cents/lb.)[3]	123.1	97.3	99.0	97.0	110.1	112.6	118.6	119.7	122.1	123.1
Net farm value (cents/lb.)[4]	95.3	61.2	60.4	58.4	74.1	77.4	88.4	89.4	91.7	90.0
Farm-retail spread (cents/lb.)	149.7	181.5	181.1	185.9	176.9	175.4	167.1	166.8	168.6	172.3
Wholesale-retail (cents/lb.)[5]	121.9	145.4	142.5	147.3	140.9	140.2	136.9	136.5	138.2	139.2
Farm-wholesale (cents/lb.)[6]	27.8	36.1	38.6	38.6	36.0	35.2	30.2	30.3	30.4	33.1
Farm value-retail value (%)	38.9	25.2	25.0	23.9	29.5	30.6	34.6	34.9	35.2	34.3

1. Retail costs are based on CPI-U of retail prices for domestically produced farm foods, published monthly by the Bureau of Labor Statistics (BLS). Farm value is the payment for the quantity of farm equivalent to the retail unit, less allowance for by-product. Farm values are based on prices at first point of sale, and may include marketing charges such as grading and packing for some commodities. The farm-retail spread, the difference between the retail value and farm value, represents charges for assembling, processing, transporting and distributing. 2. Weighted-average value of retail cuts from pork and Choice yield grade 3 beef. Prices from BLS. 3. Value of wholesale (boxed beef) and wholesale cuts (pork) equivalent to 1 lb. of retail cuts adjusted for transportation costs and by-product values. 4. Market value to producer for live animal equivalent to 1 lb. of retail cuts, minus value of by-products. 5. Charges for retailing and other marketing services such as wholesaling and in-city transportation. 6. Charges for livestock marketing, processing, and transportation. *Information contact: Veronica Jones (202) 694-5387, William F. Hahn (202) 694-5175*

Table 9—Price Indexes of Food Marketing Costs

	Annual			1998	1999				2000	
	1997	1998	1999	IV	I	II	III	IV	I	II
					*1987=100**					
Labor—hourly earnings and benefits	474.3	490.4	503.3	494.6	498.6	503.5	504.2	506.7	508.2	513.7
Processing	486.0	499.3	511.4	504.9	504.2	512.1	513.4	515.6	518.1	523.6
Wholesaling	536.2	552.5	564.6	555.1	565.3	572.8	575.2	580.0	578.9	593.8
Retailing	435.2	454.1	465.8	459.4	463.6	464.2	463.8	465.4	467.1	468.5
Packaging and containers	390.3	395.5	399.4	391.9	390.3	396.4	403.0	407.7	410.3	410.6
Paperboard boxes and containers	341.9	365.2	373.0	359.8	355.7	368.3	380.2	387.8	391.9	413.0
Metal cans	491.0	487.9	486.6	486.6	486.6	486.6	486.6	486.6	489.5	440.1
Paper bags and related products	441.9	432.9	440.9	428.5	425.6	435.7	446.3	455.8	457.3	472.4
Plastic films and bottles	326.6	322.8	324.2	318.5	319.7	321.4	325.9	329.6	329.4	330.6
Glass containers	447.4	446.8	447.1	447.3	447.8	447.8	447.0	445.8	450.1	451.1
Metal foil	233.4	232.0	227.3	230.9	228.2	226.1	226.7	228.0	229.8	231.3
Transportation services	430.0	428.3	394.0	425.0	393.5	394.2	394.2	394.2	392.3	393.2
Advertising	609.4	624.5	623.7	626.2	622.2	622.9	623.9	625.6	633.6	635.0
Fuel and power	668.5	619.7	651.5	601.6	586.6	627.3	681.1	711.9	816.5	822.2
Electric	499.2	492.1	489.4	485.0	479.0	484.0	505.9	488.5	477.2	487.0
Petroleum	616.7	457.0	565.9	423.3	388.4	504.0	613.2	758.1	1,114.0	1,102.2
Natural gas	1,214.0	1,239.4	1,235.6	1,217.7	1,206.3	1,222.8	1,272.7	1,240.4	1,235.3	1,259.8
Communications, water and sewage	302.8	307.6	309.3	308.5	309.3	308.5	308.9	310.6	310.3	307.8
Rent	265.6	260.5	256.9	258.8	257.5	257.3	256.4	256.4	256.8	256.8
Maintenance and repair	514.9	529.3	541.6	535.1	537.9	540.7	542.5	545.3	552.2	558.3
Business services	512.3	522.9	531.9	530.3	528.1	530.2	533.3	536.1	540.3	541.2
Supplies	337.8	332.3	327.7	329.5	326.1	325.9	327.1	331.7	365.6	338.2
Property taxes and insurance	580.1	598.3	619.7	606.1	609.6	615.2	622.8	631.3	639.8	647.4
Interest, short-term	108.9	103.7	103.7	96.0	93.2	96.7	109.7	115.2	119.5	129.3
Total marketing cost index	459.9	467.2	472.2	468.0	465.1	470.7	475.2	479.1	486.8	489.5

Last two quarters preliminary. * Indexes measure changes in employee earnings and benefits and in prices of supplies used in processing, wholesaling, and retailing U.S. farm foods purchased for at-home consumption. *Information contact: Veronica Jones (202) 694-5387*

Livestock & Products

Table 10—U.S. Meat Supply & Use

	Beg. stocks	Produc-tion[1]	Imports	Total supply	Exports	Ending stocks	Consumption: Total	Consumption: Per capita[2]	Conversion factor[3]	Primary market price[4]
	Million lbs.[5]							*Lbs.*		*$/cwt*
Beef										
1997	377	25,490	2,344	28,211	2,136	465	25,611	67	0.700	66.32
1998	465	25,760	2,643	28,868	2,171	393	26,305	68	0.700	61.48
1999	393	26,493	2,874	29,760	2,411	411	26,938	69	0.700	65.56
2000	411	26,881	3,029	30,321	2,515	390	27,416	70	0.700	68-70
2001	390	25,681	3,050	29,121	2,435	365	26,321	66	0.700	72-77
Pork										
1997	366	17,274	634	18,274	1,044	408	16,823	49	0.776	54.30
1998	408	19,011	705	20,124	1,230	584	18,309	53	0.776	34.72
1999	584	19,308	827	20,720	1,285	489	18,945	54	0.776	34.00
2000	489	18,899	1,005	20,393	1,260	500	18,633	53	0.776	45-46
2001	500	19,080	1,005	20,585	1,305	500	18,780	52	0.776	42-46
Veal[6]										
1997	7	334	0	341	0	8	333	1	0.83	82
1998	8	262	0	270	0	5	265	1	0.83	82
1999	5	235	0	240	0	5	235	1	0.83	90
2000	5	226	0	231	0	4	227	1	0.83	103
2001	4	208	0	212	0	4	208	1	0.83	105
Lamb and mutton										
1997	9	260	83	352	6	14	332	1	0.89	88
1998	14	251	112	377	6	12	360	1	0.89	74
1999	12	248	113	372	5	9	358	1	0.89	76
2000	9	227	114	350	6	10	334	1	0.89	78
2001	10	220	114	344	4	10	330	1	0.89	79
Total red meat										
1997	759	43,358	3,061	47,178	3,185	894	43,099	118	--	--
1998	894	45,284	3,461	49,639	3,407	994	45,239	123	--	--
1999	994	46,284	3,813	51,092	3,701	914	46,476	125	--	--
2000	914	46,233	4,148	51,295	3,781	904	46,610	124	--	--
2001	904	45,189	4,169	50,262	3,744	879	45,639	120		
										¢/lb
Broilers										
1997	641	27,041	5	27,687	4,664	607	22,416	72	0.859	59
1998	607	27,612	5	28,225	4,673	711	22,841	73	0.859	63
1999	711	29,468	4	30,183	4,866	796	24,521	77	0.859	58
2000	796	30,370	4	31,169	5,055	850	25,264	79	0.859	56
2001	850	31,967	4	32,821	5,050	880	26,891	83	0.859	56
Mature chickens										
1997	6	510	0	516	384	7	125	1	1.0	--
1998	7	525	0	533	426	6	101	1	1.0	--
1999	6	554	0	562	393	8	162	1	1.0	--
2000	8	543	0	552	349	5	197	1	1.0	--
2001	5	564	0	571	360	10	201	1	1.0	--
Turkeys										
1997	328	5,412	1	5,741	606	415	4,720	18	1.0	65
1998	415	5,215	0	5,630	446	304	4,880	18	1.0	62
1999	304	5,230	1	5,535	379	254	4,902	18	1.0	69
2000	254	5,381	0	5,635	419	250	4,967	18	1.0	71
2001	250	5,380	1	5,631	420	275	4,935	18	1.0	68
Total poultry										
1997	975	32,964	6	33,944	5,654	1,029	27,261	90	--	--
1998	1,029	33,352	6	34,387	5,545	1,022	27,821	91	--	--
1999	1,022	35,252	7	36,281	5,638	1,058	29,585	96	--	--
2000	1,058	36,294	6	37,357	5,823	1,105	30,428	97	--	--
2001	1,105	37,911	7	39,023	5,830	1,165	32,027	102		
Red meat and poultry										
1997	1,734	76,321	3,067	81,123	8,839	1,923	70,360	208	--	--
1998	1,923	78,637	3,467	84,027	8,951	2,016	73,060	214	--	--
1999	2,016	81,537	3,820	87,372	9,340	1,972	76,061	220	--	--
2000	1,972	82,527	4,154	88,652	9,603	2,009	77,039	221	--	--
2001	2,000	83,100	4,176	89,285	9,574	2,044	77,666	222	--	--

-- = Not available. Values for the last 2 years are forecasts. 1. Total including farm production for red meat and federally inspected plus nonfederally inspected for poultry. 2. Retail-weight basis. 3. Red meat, carcass to retail conversion; poultry, ready-to-cook production to retail weight. 4. Beef: Medium #1, Nebraska Direct 1,100-1,300 lb.; pork: barrows and gilts, Iowa, Southern Minnesota; veal: farm price of calves; lamb and mutton: choice slaughter lambs, San Angelo; broilers: wholesale 12-city average; turkeys: wholesale NY 8-16 lb. young hens. 5. Carcass weight for red meats and certified ready-to-cook for poultry. 6. Beginning in 1989, veal trade is no longer reported separately. *Information contact: LaVerne Williams (202) 694-5190*

Table 11—U.S. Egg Supply & Use

	Beg. stocks	Production	Imports	Total supply	Exports	Hatching use	Ending stocks	Consumption Total	Consumption Per capita	Primary market price*
	Million doz.								*No.*	*¢/doz.*
1994	10.7	6,177.6	3.7	6,192.0	187.6	805.4	14.9	5,184.1	238.7	67.3
1995	14.9	6,215.6	4.1	6,234.6	208.9	847.2	11.2	5,167.3	235.6	72.9
1996	11.2	6,350.7	5.4	6,367.3	253.1	863.8	8.5	5,241.8	236.8	88.2
1997	8.5	6,473.1	6.9	6,488.5	227.8	894.7	7.4	5,358.6	240.1	81.2
1998	7.4	6,657.9	5.8	6,671.2	218.8	921.8	8.4	5,522.2	244.9	75.8
1999	8.4	6,912.0	7.4	6,927.8	161.7	941.7	7.6	5,816.8	255.5	65.6
2000	7.6	7,072.1	7.5	7,087.2	163.0	962.9	6.5	5,954.8	259.2	64.1
2001	6.5	7,170.0	5.0	7,181.5	170.0	1,015.0	5.0	5,991.5	258.7	61.0

Values for the last year are forecasts. Values for previous year are preliminary. * Cartoned grade A large eggs, New York.
Information contact: LaVerne Williams (202) 694-5190

Table 12—U.S. Milk Supply & Use[1]

	Production	Commercial Farm use	Commercial Farm marketings	Commercial Beg. stocks	Imports	Total commercial supply	Commercial CCC net removals	Commercial Ending stocks	Commercial Disappearance	Commercial All milk price[1]	CCC net removals Skim solids basis	CCC net removals Total solids basis[2]
	Million lbs. (milkfat basis)									*$/cwt*	*Billion lbs.*	
1993	150.6	1.8	148.8	4.7	2.8	156.3	6.6	4.5	145.1	12.80	3.9	5.0
1994	153.6	1.7	151.9	4.5	2.9	159.3	4.8	4.3	150.3	12.97	3.7	4.2
1995	155.3	1.6	153.7	4.3	2.9	160.9	2.1	4.1	154.9	12.74	4.4	3.5
1996	154.0	1.5	153.5	4.1	2.9	159.5	0.1	4.7	154.7	14.74	0.7	0.5
1997	156.1	1.4	154.7	4.7	2.7	162.1	1.1	4.9	156.1	13.34	3.7	2.7
1998	157.4	1.4	156.1	4.9	4.6	165.5	0.4	5.3	159.9	15.42	4.0	2.6
1999	162.7	1.4	161.3	5.3	4.7	171.4	0.3	6.1	164.9	14.36	6.5	4.0
2000	167.5	1.3	166.2	6.1	4.2	176.5	0.8	5.5	170.2	12.40	8.7	5.5
2001	167.4	1.3	166.1	5.5	4.0	175.6	0.4	5.5	169.7	12.70	1.8	1.2

Values for latest year are forecasts. Values for the preceding year are preliminary. 1. Delivered to plants and dealers; does not reflect deductions.
2. Arbitrarily weighted average of milkfat basis (40 percent) and solids basis (60 percent). *Information contact: Jim Miller (202) 694-5184*

Table 13—Poultry & Eggs

	Annual 1997	Annual 1998	Annual 1999	1999 Jun	2000 Jan	2000 Feb	2000 Mar	2000 Apr	2000 May	2000 Jun
Broilers										
Federally inspected slaughter certified (mil. lb.)	27,270.7	27,862.7	29,741.4	2,587.7	2,426.2	2,486.0	2,670.8	2,359.7	2,733.5	2,631.6
Wholesale price, 12-city (cents/lb.)	58.8	63.1	58.1	60.3	55.4	53.8	54.5	55.4	55.7	56.0
Price of grower feed ($/ton)[1]	157.7	128.8	102.7	103.2	104.5	108.1	110.8	112.3	115.6	108.8
Broiler-feed price ratio[2]	4.7	6.3	7.2	7.5	6.7	6.2	6.3	6.5	6.4	6.8
Stocks beginning of period (mil. lb.)	641.3	606.8	711.1	803.3	795.6	796.4	786.7	804.9	842.6	816.5
Broiler-type chicks hatched (mil.)	8,321.6	8,491.9	8,717.7	744.4	749.4	701.0	756.4	743.5	775.2	748.0
Turkeys										
Federally inspected slaughter certified (mil. lb.)	5,477.9	5,280.6	5,296.5	455.6	399.9	413.2	470.9	417.0	492.3	482.2
Wholesale price, Eastern U.S. 8-16 lb. young hens (cents/lb.)	64.9	62.2	69.0	68.9	61.6	61.8	65.4	67.4	69.2	70.4
Price of turkey grower feed ($/ton)[1]	142.7	115.9	95	94.9	95.8	99.2	100.1	102.1	104.9	97.9
Turkey-feed price ratio[2]	5.6	6.7	8.7	8.7	7.6	7.2	7.6	7.8	7.7	8.5
Stocks beginning of period (mil. lb.)	328.0	415.1	304.3	494.3	254.3	312.4	347.3	387.5	413.3	477
Poults placed in U.S. (mil.)	321.5	297.8	297.3	25.6	24.7	24.2	25.7	24.9	26.3	27
Eggs										
Farm production (mil.)	77,677	79,941	82,939	6,742	7,155	6,659	7,235	7,013	7,105	6,801
Average number of layers (mil.)	304	313	323	320	329	330	331	329	326	325
Rate of lay (eggs per layer on farms)	255.3	255.4	256.8	21	21.8	20.2	21.9	21.3	21.8	20.9
Cartoned price, New York, grade A large (cents/doz.)[3]	81.2	75.8	65.6	54.9	62.2	67.1	60.7	68.5	53.4	64.2
Price of laying feed ($/ton)[1]	160.0	137.7	124.5	139.3	130.3	121.4	143.5	139.4	165.1	131
Egg-feed price ratio[2]	8.8	9.8	9.8	8.2	8.9	11.3	8	9.4	6.3	9.6
Stocks, first of month Frozen (mil. doz.)	7.7	7.4	8.4	7.4	7.6	9.2	7	6.1	5.4	6.2
Replacement chicks hatched (mil.)	424.5	438.3	450.9	41.5	34.1	35.5	39.6	36.6	40.9	36.6

1. Calculated from price ratios that were revised February 1995. 2. Pounds of feed equal in value to 1 dozen eggs or 1 lb. of broiler or turkey liveweight (revised February 1995). 3. Price of cartoned eggs to volume buyers for delivery to retailers. *Information contact: LaVerne Williams (202) 694-5190*

Table 14—Dairy

	Annual		1999	2000					
	1997	1998	1999	Jun	Jan	Feb	Mar	Apr	May	Jun
Class III (BFP before 2000) 3.5% fat ($/cwt.)	12.05	14.20	12.43	11.42	10.05	9.54	9.54	9.41	9.37	9.46
Wholesale prices										
Butter, Central States (cents/lb.) [1]	116.2	177.6	125.2	150.4	91.6	92.9	99.7	108.7	122.2	128.6
Am. cheese, Wis. assembly pt. (cents/lb.)	132.4	158.1	142.2	138.1	114.6	111.6	112.2	110.7	110.6	120.0
Nonfat dry milk (cents/lb.) [2]	110.0	106.9	103.5	101.4	100.9	100.2	100.1	100.0	100.1	101.2
USDA net removals										
Total (mil. lb.) [3]	1,090.3	365.6	343.5	22.6	88.4	99.3	86.3	77.7	89.9	48.6
Butter (mil. lb.)	38.4	6.3	3.7	0.0	2.0	2.6	1.6	0.9	0.8	0.7
Am. cheese (mil. lb.)	11.3	8.2	4.6	0.1	0.4	0.7	1.8	2.2	4.0	0.8
Nonfat dry milk (mil. lb.)	298.0	326.4	540.6	69.7	60.3	63.5	76.5	75	81.8	58
Milk										
Milk prod. 20 states (mil. lb.)	133,314	134,900	140,029	11,737	12,256	11,691	12,679	12,399	12,743	12,083
Milk per cow (lb.)	17,180	17,501	18,103	1,516	1,578	1,505	1,631	1,592	1,635	1,547
Number of milk cows (1,000)	7,760	7,708	7,735	7,740	7,765	7,766	7,774	7,787	7,795	7,810
U.S. milk production (mil. lb.) [4]	156,091	157,348	162,711	13,629	14,258	13,596	14,739	14,373	14,767	13,997
Stocks, beginning [3]										
Total (mil. lb.)	4,714	4,907	5,301	9,699	6,179	7,623	8,357	8,702	9,602	9,983
Commercial (mil. lb.)	4,704	4,889	5,274	9,669	6,135	7,576	8,300	8,638	9,520	9,883
Government (mil. lb.)	10	18	28	31	44	47	57	64	82	100
Imports, total (mil. lb.) [3]	2,698	4,588	4,772	282	265	316	371	358	412	--
Commercial disappearance (mil. lb.) [3]	156,118	159,779	164,911	14,254	12,881	12,984	14,573	13,662	14,612	--
Butter										
Production (mil. lb.)	1,151.2	1,168.0	1,275.0	94.6	142.3	130.3	122.5	115.4	111.2	91.2
Stocks, beginning (mil. lb.)	13.4	20.5	25.9	136.3	24.9	72.6	88.5	97.4	126.6	137.6
Commercial disappearance (mil. lb.)	1,108.7	1,222.5	1,308.4	113.8	93.2	113.8	113.7	86.7	102.7	--
American cheese										
Production (mil. lb.)	3,285.6	3,314.7	3,576.5	294.0	316.7	302.3	320.2	312.5	326.5	310.6
Stocks, beginning (mil. lb.)	379.6	410.3	407.6	574.5	458.0	480.1	515.3	524.9	547.9	554.6
Commercial disappearance (mil. lb.)	3,269.0	3,338.6	3,586.1	324.0	296.5	268.4	313.7	292.9	322.3	--
Other cheese										
Production (mil. lb.)	4,044.9	4,177.5	4,367.5	375.4	370.2	343.2	397.7	381	410.6	388.3
Stocks, beginning (mil. lb.)	107.3	70.0	109.5	182.3	163.3	187.9	193.0	201.7	200.7	208.8
Commercial disappearance (mil. lb.)	4,366.6	4,452.0	4,678.2	384.4	367.4	362.1	418.4	409.1	432.6	--
Nonfat dry milk										
Production (mil. lb.)	1,271.6	1,135.4	1,378.2	118.6	133.6	133.1	139.5	147	137.9	128.5
Stocks, beginning (mil. lb.)	71.1	103.3	56.9	162.4	115.5	146.2	173.4	167.9	197.4	197
Commercial disappearance (mil. lb.)	894.1	866.9	791.1	49.8	43.1	43.1	70.2	42.8	57.2	--
Frozen dessert										
Production (mil. gal.) [5]	1,290.0	1,324.3	1,311.8	137.6	83.8	98.6	120.4	117.2	127.3	133.8

	Annual			1998	1999				2000	
	1,997	1,998	1,999	IV	I	II	III	IV	I	II
Milk production (mil. lb.)	156,091	157,348	162,711	38,901	40,505	42,029	39,771	40,406	42,593	43,150
Milk per cow (lb.)	16,871	17,189	17,771	4,262	4,437	4,591	4,337	4,406	4,636	4,683
No. of milk cows (1,000)	9,252.00	9,154.00	9,156.00	9,128.00	9,128.00	9,155.00	9,171.00	9,170.00	9,187.00	9,215.00
Milk-feed price ratio	1.54	1.97	2.03	2.46	2.20	1.81	2.12	1.99	1.68	1.67
Returns over concentrate	9.8	12.15	11.45	14.8	13	9.9	11.90	10.95	8.95	9.05

-- = Not available. Quarterly values for latest year are preliminary. 1. Grade AA Chicago before June 1998. 2. Prices paid f.o.b. Central States production area. 3. Milk equivalent, fat basis. 4. Monthly data ERS estimates. 5. Hard ice cream, ice milk, and hard sherbet. *Information contact: LaVerne Williams (202) 694-5190*

Table 15—Wool

	Annual			1998	1999				2000	
	1997	1998	1999	IV	I	II	III	IV	I	II
U.S. wool price (¢/lb.) [1]	238	162	110	115	115	116	110	98	97	120
Imported wool price (¢/lb.) [2]	206	164	136	141	146	142	133	125	133	139
U.S. mill consumption, scoured										
Apparel wool (1,000 lb.)	130,386	98,373	65,468	17,530	17,294	16,815	15,793	13,633	17,142	--
Carpet wool (1,000 lb.)	13,576	16,331	15,017	4,388	4,220	3,581	3,183	2,966	3,784	--

-- = Not available. 1. Wool price delivered at U.S. mills, clean basis, Graded Territory 64's (20.60-22.04 microns) staple 2-3/4" and up. 2. Wool price, Charleston, SC warehouse, clean basis, Australian 60/62's, type 64A (24 micron). Duty since 1982 has been 10 cents.
Information contact: Mae Dean Johnson (202) 694-5299

Table 16—Meat Animals

	Annual		1999		2000					
	1997	1998	1999	Jul	Feb	Mar	Apr	May	Jun	Jul
Cattle on feed (7 states, 1000+ head capacity)										
Number on feed (1,000 head)[1]	8,943	9,455	9,021	8,183	9,885	9,695	9,573	9,361	9,411	8,959
Placed on feed (1,000 head)	20,765	19,697	21,446	1,565	1,606	1,716	1,450	1,998	1,413	1,674
Marketings (1,000 head)	19,552	19,440	20,124	1,816	1,749	1,764	1,591	1,863	1,828	1,784
Other disappearance (1,000 head)	701	691	676	43	47	74	71	85	37	37
Market prices ($/cwt)										
Slaughter cattle										
Choice steers, 1,100-1,300 lb.										
Texas	65.99	61.75	65.89	64.51	68.88	71.74	73.13	71.28	69.41	67.22
Neb. direct	66.32	61.48	65.65	64.05	68.24	71.74	73.52	71.66	69.59	66.46
Boning utility cows, Sioux Falls	34.27	36.20	38.40	42.50	38.80	41.58	43.81	43.50	45.38	43.88
Feeder steers										
Medium no. 1, Oklahoma City										
600-650 lb.	81.34	77.70	82.64	84.24	94.55	98.96	95.47	95.03	95.23	98.07
750-800 lb.	76.19	71.80	76.39	76.94	84.03	83.84	84.28	83.42	86.71	89.25
Slaughter hogs										
Barrows and gilts, 51-52 percent lean										
National Base converted to live equal.	54.30	34.72	34.02	32.84	41.58	43.52	49.59	50.21	51.48	50.45
Sows, Iowa, S.MN 1-2 300-400 lb.	40.24	20.29	19.26	16.22	25.35	26.86	30.33	33.17	33.70	32.31
Slaughter sheep and lambs										
Lambs, Choice, San Angelo	87.95	74.20	75.97	77.29	76.83	78.17	78.25	89.65	78.30	84.17
Ewes, Good, San Angelo	49.33	40.90	42.32	48.18	51.92	49.92	47.08	--	44.86	48.00
Feeder lambs										
Choice, San Angelo	104.43	79.59	81.05	77.29	99.54	99.58	99.33	100.45	91.14	93.25
Wholesale meat prices, Midwest										
Boxed beef cut-out value										
Choice, 700-800 lb.	102.75	98.60	111.55	111.14	112.18	118.25	123.97	126.00	123.85	115.60
Select, 700-800 lb.	96.15	92.19	101.99	101.45	106.88	112.56	115.40	111.19	110.16	106.87
Canner and cutter cow beef	64.50	61.49	66.66	70.33	72.38	72.67	74.38	73.60	74.20	75.33
Pork cutout	--	53.07	53.45	50.55	62.18	63.62	68.92	68.59	70.07	70.45
Pork loins, bone-in, 1/4 " trim,14-19 lb.	128.75	102.04	100.25	105.72	110.66	110.06	127.48	115.38	132.53	131.73
Pork bellies, 12-14 lb.	73.91	52.38	57.43	47.78	82.40	85.00	93.70	97.85	91.99	90.38
Hams, bone-in, trimmed, 20-23 lb.	--	--	47.90	40.79	46.50	49.31	48.84	53.36	54.43	60.07
All fresh beef retail price	253.77	253.28	260.50	259.80	270.10	270.80	272.50	274.30	278.40	279.60
Commercial slaughter (1,000 head)[2]										
Cattle	36,318	35,465	36,150	3,083	2,937	3,131	2,782	3,176	3,237	--
Steers	17,529	17,428	17,936	1,622	1,396	1,526	1,409	1,647	1,678	--
Heifers	11,528	11,448	11,866	975	1,046	1,077	923	1,006	1,040	--
Cows	6,564	5,983	5,708	433	445	472	402	467	463	--
Bull and stags	696	606	639	53	50	56	48	56	56	--
Calves	1,575	1,458	1,484	111	95	103	81	92	95	--
Sheep and lambs	3,911	3,911	3,698	265	293	344	345	259	260	--
Hogs	91,960	101,029	101,544	7,908	8,067	8,811	7,210	7,945	7,950	--
Barrows and gilts	88,409	97,030	97,738	7,590	7,807	8,516	6,963	7,664	7,652	--
Commercial production (mil. lb.)										
Beef	25,384	25,653	25,656	2,256	2,175	2,300	2,026	2,302	2,369	--
Veal	324	252	250	19	18	20	17	19	19	--
Lamb and mutton	257	248	247	17	20	24	23	17	17	--
Pork	17,244	18,981	18,981	1,489	1,554	1,700	1,394	1,540	1,536	--

	Annual			1999			2000			
	1997	1998	1999	I	II	III	IV	I	II	III
Hogs and pigs (U.S.)[3]										
Inventory (1,000 head)[1]	56,124	61,158	62,206	62,206	60,191	60,896	60,776	59,337	58,137	59,397
Breeding (1,000 head)[1]	6,578	6,957	6,682	6,682	6,527	6,515	6,301	6,244	6,205	6,234
Market (1,000 head)[1]	49,546	54,200	55,523	55,523	53,663	54,380	54,474	53,094	51,933	53,164
Farrowings (1,000 head)	11,479	12,061	11,666	2,891	2,986	2,920	2,844	2,819	2,905	2,854
Pig crop (1,000 head)	99,584	105,004	102,569	25,247	26,270	25,860	24,972	24,777	25,831	--
Cattle on Feed, 7 states (1,000 head)[4]										
Steers and steer calves	5,410	5,803	5,432	5,432	5,341	4,849	5,286	5,768	5,736	5,326
Heifers and heifer calves	3,455	3,615	3,552	3,552	3,527	3,302	3,479	3,942	3,800	3,602
Cows and bulls	78	59	37	37	31	44	28	42	37	31

-- = Not available. 1. Beginning of period. 2. Classes estimated. 3. Quarters are Dec. of preceding year to Feb. (I), Mar.-May (II), June-Aug. (III), and Sept.-Nov. (IV). 4. Beginning of period. The 7 states include AZ, CA, CO, IA, KS, NE, and TX. *Information contact: Leland Southard (202) 694-5187*

Crops & Products

Table 17—Supply & Utilization[1,2]

	Area												
	Set-aside[3]	Planted	Harvested	Yield	Production	Total supply[4]	Feed & residual	Other domestic use	Exports	Total use	Ending stocks	Farm price[5]
	Mil. Acres			*Bu./acre*	*Mil. bu.*							*$/bu.*
Wheat												
1996/97	--	75.1	62.8	36.3	2,277	2,746	308	993	1,002	2,302	444	4.30
1997/98	--	70.4	62.8	39.5	2,481	3,020	251	1,007	1,040	2,298	722	3.38
1998/99	--	65.8	59.0	43.2	2,547	3,373	394	990	1,042	2,427	946	2.65
1999/00*	--	62.8	53.9	42.7	2,302	3,343	286	1,017	1,090	2,393	950	2.50
2000/01*	--	62.9	54.4	41.6	2,263	3,313	225	1,026	1,100	2,351	962	2.25-2.75
	Mil. acres			*Lb./acre*			*Mil. cwt (rough equiv)*					*$/cwt*
Rice[6]												
1996/97	--	2.8	2.8	6,120.0	171.6	207.1	--	6/ 102.7	77.2	179.9	27.2	9.96
1997/98	--	3.1	3.1	5,897.0	183.0	219.4	--	6/ 104.6	86.9	191.5	27.9	9.70
1998/99	--	3.3	3.3	5,669.0	188.1	226.5	--	6/ 119.1	85.3	204.4	22.1	8.89
1999/00*	--	3.6	3.6	5,908.0	210.5	243.3	--	6/ 116.6	89.0	205.6	37.7	6.10
2000/01*	--	3.3	3.2	6,184.0	198.2	246.9	--	6/ 119.4	88.0	207.4	39.5	4.75-5.75
	Mil. acres			*Bu./acre*				*Mil. bu.*				*$/bu.*
Corn												
1996/97	--	79.2	72.6	127.1	9,233	9,672	5,277	1,714	1,797	8,789	883	2.71
1997/98	--	79.5	72.7	126.7	9,207	10,099	5,482	1,805	1,504	8,791	1,308	2.43
1998/99	--	80.2	72.6	134.4	9,759	11,085	5,471	1,846	1,981	9,298	1,787	1.94
1999/00*	--	77.4	70.5	133.8	9,437	11,239	5,625	1,920	1,900	9,445	1,794	1.80
2000/01*	--	79.6	73.1	141.9	10,369	12,174	5,700	1,960	2,125	9,785	2,389	1.45-1.85
	Mil. acres			*Bu./acre*				*Mil bu.*				$/bu.
Sorghum												
1996/97	--	13.1	11.8	67.3	795	814	516	45	205	766	47	2.34
1997/98	--	10.1	9.2	69.2	634	681	365	55	212	632	49	2.21
1998/99	--	9.6	7.7	67.3	520	569	262	45	197	504	65	1.66
1999/00*	--	9.3	8.5	69.7	595	660	290	55	250	595	65	1.55
2000/01*	--	8.8	8.3	69.5	578	643	275	55	240	570	73	1.20-1.60
	Mil. acres			*Bu./acre*				*Mil. bu.*				*$/bu.*
Barley												
1996/97	--	7.1	6.7	58.5	392	529	217	172	31	419	109	2.74
1997/98	--	6.7	6.2	58.1	360	510	144	172	74	390	119	2.38
1998/99	--	6.3	5.9	60.0	352	501	161	170	28	360	142	1.98
1999/00*	--	5.2	4.8	59.2	282	451	137	172	30	339	112	2.15
2000/01*	--	5.7	5.2	58.8	308	450	145	172	30	347	103	1.65-2.05
	Mil. acres			*Bu./acre*				*Mil. bu.*				*$/bu.*
Oats												
1996/97	--	4.6	2.7	57.7	153	317	172	76	3	250	67	1.96
1997/98	--	5.1	2.8	59.5	167	332	185	72	2	258	74	1.60
1998/99	--	4.9	2.8	60.2	166	348	196	69	2	266	81	1.10
1999/00*	--	4.7	2.5	59.6	146	326	180	68	2	250	76	1.10
2000/01*	--	4.5	2.5	61.8	153	329	180	68	2	250	79	0.95-1.35
	Mil. acres			*Bu./acre*				*Mil. bu.*				*$/bu.*
Soybeans[7]												
1996/97	--	62.6	61.6	35.3	2,177	2,516	112	1,370	851	2,333	183	6.72
1997/98	--	70.0	69.1	38.9	2,689	2,826	156	1,597	873	2,626	200	6.47
1998/99	--	72.0	70.4	38.9	2,741	2,944	201	1,590	805	2,595	348	4.93
1999/00*	--	73.8	72.5	36.5	2,643	2,994	170	1,570	975	2,715	280	4.65
2000/01*	--	74.5	73.5	40.7	2,989	3,273	173	1,625	1,010	2,808	465	3.90-4.80
								Mil. lbs.				*¢/lb.*
Soybean oil												
1996/97	--	--	--	--	15,752	17,821	--	14,263	2,037	16,300	1,520	22.50
1997/98	--	--	--	--	18,143	19,723	--	15,262	3,079	18,341	1,382	25.84
1998/99	--	--	--	--	18,081	19,546	--	15,655	2,371	18,027	1,520	19.90
1999/00*	--	--	--	--	17,765	19,375	--	16,300	1,200	17,500	1,875	15.70
2000/01*	--	--	--	--	18,445	20,410	--	16,650	1,800	18,450	1,960	15.00-18.00
								1,000 tons				*$/ton*[8]
Soybean meal												
1996/97	--	--	--	--	34,210	34,524	--	27,320	6,994	34,314	210	270.9
1997/98	--	--	--	--	38,176	38,443	--	28,895	9,329	38,225	218	185.5
1998/99	--	--	--	--	37,792	38,109	--	30,657	7,122	37,779	330	138.5
1999/00*	--	--	--	--	37,335	37,725	--	30,400	7,000	37,400	325	165.0
2000/01*	--	--	--	--	38,535	38,925	--	31,250	7,400	38,650	275	140-165

See footnotes at end of table, next page

Table 17—Supply & Utilization (continued)

	Area						Feed &	Other domestic					
	Set-aside[3]	Planted	Harvested	Yield	Production	Total supply[4]	residual	use	Exports	Total use	Ending stocks	Farm price[5]	
	Mil. Acres			*Lb./acre*	*Mil. Bales*							*¢/lb.*	
Cotton[9]													
1996/97	1.7	14.7	12.9	705	18.9	22.0	--	11.1	6.9	18.0	4.0	69.3	
1997/98	0.3	13.9	13.4	673	18.8	22.8	--	11.3	7.5	18.8	3.9	65.2	
1998/99	--	13.4	10.7	625	13.9	18.2	--	10.4	4.3	14.7	3.9	60.2	
1999/00*	--	14.9	13.4	607	17.0	21.0	--	10.1	6.8	16.9	4.1	44.9	
2000/01*	--	15.5	14.2	648	19.2	23.3	--	10.2	8.2	18.4	4.9	--	

-- = Not available or not applicable. *August 11, 2000 Supply and Demand Estimates. 1. Marketing year beginning June 1 for wheat, barley, and oats; August 1 for cotton and rice; September 1 for soybeans, corn, and sorghum; October 1 for soymeal and soyoil. 2. Conversion factors: Hectare (ha.) = 2.471 acres, 1 metric ton = 2,204.622 pounds, 36.7437 bushels of wheat or soybeans, 39.3679 bushels of corn or sorghum, 45.9296 bushels of barley, 68.8944 bushels of oats, 22.046 cwt of rice, and 4.59 480-pound bales of cotton. 3. Includes diversion, acreage reduction, 50-92, & 0-92 programs. 0/92 & 50/92 set-aside includes idled acreage and acreage planted to minor oilseeds, sesame, and crambe. 4. Includes imports. 5. Marketing-year weighted average price received by farmers. Does not include an allowance for loans outstanding and government purchases. 6. Residual included in domestic use. 7. Includes seed. 8. Simple average of 48 percent protein, Decatur. 9. Upland and extra-long staple. Stocks estimates based on Census Bureau data, resulting in an unaccounted difference between supply and use estimates and changes in ending stocks. *Information contacts: Wheat, rice, feed grains, Jenny Gonzales (202) 694-5296; soybeans, soybean products, and cotton, Mae Dean Johnson (202) 694-5299*

Table 18—Cash Prices, Selected U.S. Commodities

	Marketing year[1]			1999	2000					
	1997/98	1998/99	1999/00	Jun	Jan	Feb	Mar	Apr	May	Jun
Wheat, no. 1 HRW, Kansas City ($/bu.)[2]	3.71	3.08	--	2.93	2.90	2.94	2.91	2.84	2.95	3.07
Wheat, DNS, Minneapolis ($/bu.)[3]	4.31	3.83	--	3.73	3.37	3.59	3.65	3.69	3.80	3.78
Rice, S.W. La. ($/cwt)[4]	18.92	16.79	--	11.47	13.00	12.69	12.63	12.31	11.88	11.47
Corn, no. 2 yellow, 30-day, Chicago ($/bu.)[5]	2.56	2.06	--	2.11	2.06	2.12	2.17	2.21	2.25	2.01
Sorghum, no. 2 yellow, Kansas City ($/cwt)[5]	4.11	3.29	--	3.32	3.20	3.28	3.51	3.53	3.75	3.18
Barley, feed, Duluth ($/bu.)	1.90	--	--	--	--	--	--	--	--	--
Barley, malting Minneapolis ($/bu.)	2.50	--	--	--	--	--	--	--	--	--
U.S. cotton price, SLM, 1-1/16 in. (¢/lb.)[6]	67.79	60.12	--	53.74	51.92	54.29	57.67	53.76	58.31	54.97
Northern Europe prices cotton index (¢/lb.)[7]	72.11	58.97	--	58.63	47.80	53.63	57.45	58.90	60.53	59.56
U.S. M 1-3/32 in. (¢/lb.)[8]	77.98	74.08	--	--	58.69	60.94	64.70	64.31	68.88	--
Soybeans, no. 1 yellow, 30-day Chicago ($/bu)	6.51	5.13	--	4.45	4.84	4.96	5.05	5.22	5.34	5.03
Soybean oil, crude, Decatur (¢/lb.)	25.84	19.90	--	16.50	15.63	15.63	16.21	15.63	16.74	14.59
Soybean meal, 48% protein, Decatur ($/ton)	185.54	138.50	--	145.90	163.41	170.85	175.50	176.45	187.90	187.05

-- = No quotes. 1. Beginning June 1 for wheat and barley; Aug. 1 for rice and cotton; September 1 for corn, sorghum, and soybeans; October 1 for soymeal and oil. 2. Ordinary protein. 3. 14 percent protein. 4. Long grain, milled basis. 5. Marketing year 1998/99 data are preliminary. 6. Average spot market. 7. Liverpool Cotlook "A" Index; average of 5 lowest prices of 13 selected growths. 8. Cotton, Memphis territory growths. *Information contacts: Wheat, rice, and feed, Jenny Gonzales (202) 694-5296; soybeans, soybean products, and cotton, Mae Dean Johnson (202) 694-5299*

Table 19—Farm Programs, Price Supports, Participation, & Payment Rates

	Target price	Basic loan rate	Findley or announced loan rate[1]	Total deficiency payment rate	Effective base acres[2]	Program[3]	Flexibility contract payment rate	Acres under contract	Contract payment yields	Participation rate[4]
					Mil. acres	*Percent of base*				
	$/bu.						*$/bu.*	*Mil. acres*	*Bu./acre*	*Percent*
Wheat										
1995/96	4.00	2.69	2.58	0.00	77.70	0/0/0	--	--	--	85
1996/97	--	--	2.58	--	--	--	0.874	76.7	34.70	99
1997/98	--	--	2.58	--	--	--	0.631	76.7	34.70	--
1998/99	--	--	2.58	--	--	--	0.663	78.9	34.50	--
1999/2000[5]	--	--	2.58	--	--	--	0.637	79.0	34.50	--
		$/cwt					*$/cwt*		*Cwt/acre*	
Rice										
1995/96	10.71	6.50	6.50 [6]	3.22 [7]	4.20	5/0/0	--	--	--	95
1996/97	--	6.50	--	--	--	--	2.766	4.2	48.27	99
1997/98	--	6.50	--	--	--	--	2.710	4.2	48.17	--
1998/99	--	6.50	--	--	--	--	2.921	4.2	48.17	--
1999/2000[5]	--	6.50	--	--	--	--	2.820	4.2	48.15	--
		$/bu.					*$/bu.*		*Bu./acre*	
Corn										
1995/96	2.75	1.94	1.89	0.00	81.80	7.5/0/0	--	--	--	82
1996/97	--	--	1.89	--	--	--	0.251	80.7	102.90	98
1997/98	--	--	1.89	--	--	--	0.486	80.9	102.80	--
1998/99	--	--	1.89	--	--	--	0.377	82.0	102.60	--
1999/2000[5]	--	--	1.89	--	--	--	0.363	81.9	102.60	--
		$/bu.					*$/bu.*		*Bu./acre*	
Sorghum										
1995/96	2.61	1.84	1.80	0.00	13.30	0/0/0	--	--	--	77
1996/97	--	--	1.81	--	--	--	0.323	13.1	57.30	99
1997/98	--	--	1.76	--	--	--	0.544	13.1	57.30	--
1998/99	--	--	1.74	--	--	--	0.452	13.6	56.90	--
1999/2000[5]	--	--	1.74	--	--	--	0.435	13.7	56.90	--
		$/bu.					*$/bu.*		*Bu./acre*	
Barley										
1995/96	2.36	1.58	1.54	0.00	10.70	0/0/0	--	--	--	82
1996/97	--	--	1.55	--	--	--	0.332	10.5	47.30	99
1997/98	--	--	1.57	--	--	--	0.277	10.5	47.20	--
1998/99	--	--	1.56	--	--	--	0.284	11.2	46.70	--
1999/2000[5]	--	--	1.59	--	--	--	0.271	11.2	46.60	--
		$/bu.					*$/bu.*		*Bu./acre*	
Oats										
1995/96	1.45	1.00	0.97	0.00	6.50	0/0/0	--	--	--	44
1996/97	--	--	1.03	--	--	--	0.033	6.2	50.80	97
1997/98	--	--	1.11	--	--	--	0.031	6.2	50.80	--
1998/99	--	--	1.11	--	--	--	0.031	6.5	50.70	--
1999/2000[5]	--	--	1.13	--	--	--	0.030	6.5	50.60	--
		$/bu.					*$/bu.*		*Bu./acre*	
Soybeans[8]										
1995/96	--	--	4.92	--	--	--	--	--	--	--
1996/97	--	--	4.97	--	--	--	--	--	--	--
1997/98	--	--	5.26	--	--	--	--	--	--	--
1998/99	--	--	5.26	--	--	--	--	--	--	--
1999/2000	--	--	5.26	--	--	--	--	--	--	--
		¢/lb.					*¢/lb.*		*Lb./acre*	
Upland cotton										
1995/96	72.90	51.92	51.92 [9]	0.00 [7]	15.50	0/0/0	--	--	--	79
1996/97	--	51.92	--	--	--	--	8.882	16.2	610.00	99
1997/98	--	51.92	--	--	--	--	7.625	16.2	608.00	--
1998/99	--	51.92	--	--	--	--	8.173	16.4	604.00	--
1999/2000[5]	--	51.92	--	--	--	--	7.880	16.4	604.00	--

-- = Not available. 1. There are no Findley loan rates for rice or cotton. See footnotes 5 and 7. 2. Prior to 1996, national effective crop acreage base as determined by FSA. Net of CRP. 3. Program requirements for participating producers (mandatory acreage reduction program/mandatory paid land diversion/optional paid land diversion). Acres idled must be devoted to a conserving use to receive program benefits. 4. Percentage of effective base enrolled in acreage reduction programs. Starting in 1996, participation rate is the percent of eligible acres that entered production flexibility contracts. 5. Estimated payment rates and acres under contract. 6. A marketing loan program has been in effect for rice since 1985/86. Loans may be repaid at the lower of: a) the loan rate or b) the adjusted world market price (announced weekly). Loans cannot be repaid at less than a specified fraction of the loan rate. Data refer to marketing-year average loan repayment rates. Beginning with the 1996 crop, loans are repaid at the lower of the loan rate plus accumulated interest or the adjusted world price. 7. Guaranteed payment rates for producers in the 50/85/92 program were $0.034/lb. for upland cotton and $4.21/cwt. for rice. 8. There are no target prices, base acres, acreage reduction programs or deficiency payment rates for soybeans. 9. A marketing loan program has been in effect for cotton since 1986/87. In 1987/88 and after, loans may be repaid at the lower of: a) the loan rate or b) the adjusted world market price (announced weekly; Plan B). Starting in 1991/92, loans cannot be repaid at less than 70 percent of the loan rate. Data refer to annual average loan repayment rates. Beginning with the 1996 crop, loans are repaid at the lower of the loan rate plus accumulated interest or the adjusted world price.
Note: The 1996 Farm Act replaced target prices and deficiency payments with fixed annual payments to producers. *Information contact: Brenda Chewning, Farm Service Agency (202) 720-8838*

Table 20—Fruit

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Citrus[1]										
Production (1,000 tons)	10,860	11,285	12,452	15,274	14,561	15,799	15,712	17,271	17,770	13,702
Per capita consumpt. (lb.)[2]	21.4	19.1	24.4	26.0	25.0	24.1	24.9	27.0	27.0	--
Noncitrus[3]										
Production (1,000 tons)	15.640	15.740	17.124	16.554	17.339	16.348	16.103	18.363	16.509	17.119
Per capita consumpt. (lb.)[2]	70.4	70.6	73.8	73.9	75.6	73.7	73.9	76.3	76.2	--

	1999				2000					
	Jun	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Grower prices										
Apples (¢/pound)[4]	12.7	23.5	23.3	23.7	23.5	21.1	20.5	19.7	18.2	16.3
Pears (¢/pound)[4]	17.80	21.95	21.90	20.70	20.70	19.30	15.65	13.45	10.20	11.00
Oranges ($/box)[5]	8.78	10.25	4.33	3.41	3.27	3.51	3.54	4.14	4.60	4.43
Grapefruit ($/box)[5]	8.78	6.80	5.21	3.71	2.40	3.64	3.63	2.82	2.51	1.29
Stocks, ending										
Fresh apples (mil. lb.)	732	6,165	5,524	4,653	4,017	3,231	2,465	1,891	1,293	832
Fresh pears (mil. lb.)	10	515	400	299	241	191	133	105	70	27
Frozen fruits (mil. lb.)	877	1,631	1,583	1,455	1,338	1,244	1,107	1,017	1,011	1,120
Frozen conc.orange juice (mil. single-strength gallons)	804	482	450	543	644	776	769	742	802	833

-- = Not available. 1. Year shown is when harvest concluded. 2. Fresh per capita consumption. 3. Calendar year. 4. Fresh use. 5. U.S. equivalent on-tree returns. *Information contact: Susan Pollack (202) 694-5251*

Table 21—Vegetables

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Production[1]										
Total vegetables (1,000 cwt)	562,938	565,754	689,070	688,824	782,505	747,988	762,952	754,220	729,576	831,986
Fresh (1,000 cwt)[2,4]	254,039	242,733	389,597	387,330	412,880	393,398	409,317	427,183	416,785	448,939
Processed (tons)[3,4]	15,444,970	16,151,030	14,973,630	15,074,707	18,481,238	17,729,497	17,681,732	16,351,849	15,639,548	19,152,331
Mushrooms (1,000 lbs)[5]	749,151	746,832	776,357	750,799	782,340	777,870	776,677	808,678	848,401	--
Potatoes (1,000 cwt)	402,110	417,622	425,367	430,349	469,425	445,099	499,254	467,091	475,771	478,109
Sweet potatoes (1,000 cwt)	12,594	11,203	12,005	11,027	13,380	12,821	13,216	13,327	12,382	12,234
Dry edible beans (1,000 cwt)	32,379	33,765	22,615	21,862	28,950	30,689	27,912	29,370	30,418	33,230

	1999				2000					
	Jun	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Shipments (1,000 cwt)										
Fresh	36,054	18,751	20,107	21,604	19,965	25,730	28,425	24,169	32,102	37,167
Iceberg lettuce	3,933	3,624	3,226	3,223	2,889	3,776	3,904	2,859	3,388	4,380
Tomatoes, all	4,035	3,469	3,471	3,673	3,642	4,463	4,553	3,845	4,020	4,272
Dry-bulb onions	3,437	4,178	3,926	3,642	3,232	3,910	3,895	3,364	3,707	3,809
Others[6]	24,649	7,480	9,484	11,066	10,202	13,581	16,073	14,101	20,987	24,706
Potatoes, all	13,737	12,951	14,620	14,751	12,201	17,170	19,972	20,460	16,892	15,085
Sweet potatoes	178	371	679	438	205	349	311	337	183	228

-- = Not available. 1. Calendar year except mushrooms. 2. Includes fresh production of asparagus, broccoli, carrots, cauliflower, celery, sweet corn, lettuce, honeydews, onions, & tomatoes through 1991. 3. Includes processing production of snap beans, sweet corn, green peas, tomatoes, cucumbers (for pickles), asparagus, broccoli, carrots, and cauliflower. 4. Data after 1991 not comparable to previous years because commodity estimates reinstated in 1992 are included. 5. Fresh and processing agaricus mushrooms only. Excludes specialty varieties. Crop year July 1- June 30. 6. Includes snap beans, broccoli, cabbage, cauliflower, celery, sweet corn, cucumbers, eggplant, bell peppers, honeydews, and watermelons. *Information contact: Gary Lucier (202) 694-5253*

Table 22—Other Commodities

	Annual			1998		1999				2000
	1997	1998	1999	III	IV	I	II	III	IV	I
Sugar										
Production[1]	7,418	7,891	9,083	733	3,959	2,636	1,031	749	4,667	2,681.1
Deliveries[1]	9,755	9,851	10,167	2,616	2,508	2,271	2,594	2,693	2,609	2.348
Stocks, ending[1]	3,377	3,423	3,855	1,679	3,422	4,219	3,184	1,639	3,855	4,551.0
Coffee										
Composite green price[2] N.Y. (¢/lb.)	146.49	114.43	88.49	98.57	97.83	94.37	90.41	77.40	91.79	85.66

	Annual			1999				2000		
	1997	1998	1999	Mar	Oct	Nov	Dec	Jan	Feb	Mar
Tobacco										
Avg. price to grower[3]										
Flue-cured ($/lb.)	1.73	1.76	1.7	--	1.82	1.8	--	--	--	--
Burley ($/lb.)	1.91	1.90	1.9	1.63	--	1.90	1.91	1.90	1.9	1.8
Domestic taxable removals										
Cigarettes (bil.)	471.4	457.9	--	34.9	--	--	--	--	--	--
Large cigars (mil.)[4]	3,552	3,721	--	332.7	--	--	--	--	--	--

-- = Not available. 1. 1,000 short tons, raw value. Quarterly data shown at end of each quarter. 2. Net imports of green and processed coffee. 3. Crop year July-June for flue-cured, October-September for burley. 4. Includes imports of large cigars. *Information contacts: sugar and coffee, Fannye Jolly (202) 694-5249; tobacco, Tom Capehart (202) 694-5245*

World Agriculture

Table 23—World Supply & Utilization of Major Crops, Livestock & Products

	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00 F	2000/01 F
					Million units					
Wheat										
Area (hectares)	222.5	222.9	222.0	214.5	219.2	230.3	227.8	224.8	216.3	216.0
Production (metric tons)	542.9	562.4	558.8	524.1	538.5	582.8	609.3	588.8	585.7	581.3
Exports (metric tons[1]	111.2	113.0	101.7	101.5	99.5	103.6	103.4	101.4	106.3	106.1
Consumption (metric tons)[2]	555.5	550.3	561.6	547.5	548.9	577.1	584.1	590.7	596.0	594.4
Ending stocks (metric tons)[3]	132.5	144.5	141.7	118.2	107.8	113.5	138.7	136.8	126.5	113.3
Coarse grains										
Area (hectares)	322.7	326.0	318.8	324.1	313.8	322.7	311.2	308.0	302.6	302.7
Production (metric tons)	810.4	871.6	798.9	871.1	802.9	908.5	884.9	890.2	877.3	889.5
Exports (metric tons)[1]	95.9	92.8	85.8	98.0	87.8	94.1	85.7	96.7	99.3	99.3
Consumption (metric tons)[2]	809.8	843.2	838.8	858.4	839.3	872.8	873.4	867.4	880.5	887.1
Ending stocks (metric tons)[3]	135.8	164.1	124.3	137.0	100.6	136.3	147.9	170.6	167.4	169.8
Rice, milled										
Area (hectares)	147.5	146.4	144.9	147.4	148.1	149.8	151.2	152.5	154.2	152.2
Production (metric tons)	354.7	355.7	355.4	364.5	371.4	380.4	386.8	394.0	403.2	398.1
Exports (metric tons)[1]	14.3	14.9	16.3	20.9	19.7	18.8	27.3	25.1	22.3	24.4
Consumption (metric tons)[2]	356.7	357.7	358.2	366.6	371.4	379.5	383.3	388.8	399.7	401.0
Ending stocks (metric tons)[3]	57.2	55.2	52.4	50.4	50.5	51.3	54.9	60.1	63.5	60.6
Total grains										
Area (hectares)	692.7	695.3	685.7	686.0	681.1	702.8	690.2	685.3	673.1	670.9
Production (metric tons)	1,708.0	1,789.7	1,713.1	1,759.7	1,712.8	1,871.7	1,881.0	1,873.0	1,866.2	1,868.9
Exports (metric tons)[1]	221.4	220.7	203.8	220.4	207.0	216.5	216.4	223.2	227.9	229.8
Consumption (metric tons)[2]	1,722.0	1,751.2	1,758.6	1,772.5	1,759.6	1,829.4	1,840.8	1,846.9	1,876.2	1,882.5
Ending stocks (metric tons)[3]	325.5	363.8	318.4	305.6	258.9	301.1	341.5	367.5	357.4	343.7
Oilseeds										
Crush (metric tons)	185.1	184.4	190.1	208.1	217.5	217.7	225.9	240.6	248.2	250.3
Production (metric tons)	224.3	227.5	229.4	261.9	258.9	261.4	286.5	294.1	298.2	308.0
Exports (metric tons)	37.6	38.2	38.7	44.1	44.3	49.6	54.0	54.8	63.6	60.6
Ending stocks (metric tons)	21.9	23.6	20.3	27.2	22.2	18.2	28.3	31.4	29.0	32.1
Meals										
Production (metric tons)	125.2	125.2	131.7	142.1	147.3	148.4	153.6	164.5	169.3	171.8
Exports (metric tons)	42.2	40.8	44.9	46.7	49.8	50.7	51.9	53.9	54.4	55.1
Oils										
Production (metric tons)	60.6	61.1	63.7	69.6	73.1	74.1	75.0	80.6	84.9	86.3
Exports (metric tons)	21.3	21.3	24.3	27.1	26.0	28.2	29.7	31.6	32.0	32.7
Cotton										
Area (hectares)	34.8	32.6	30.7	32.2	35.9	33.8	33.7	33.0	32.3	32.6
Production (bales)	95.8	82.5	77.1	86.0	93.1	89.6	91.6	84.7	87.0	87.3
Exports (bales)	28.5	25.5	26.8	28.4	27.8	26.9	26.7	23.7	27.3	27.6
Consumption (bales)	86.1	85.9	85.4	84.7	86.0	88.0	87.2	85.1	91.2	92.5
Ending stocks (bales)	37.4	34.7	26.8	29.8	36.6	40.1	43.5	44.8	40.1	35.1
	1991	1992	1993	1994	1995	1996	1997	1998	1999 F	2000 F
Red meat[4]										
Production (metric tons)	117.7	117.3	119.3	124.6	129.5	123.6	129.5	134.5	136.4	137.8
Consumption (metric tons)	116.1	115.7	118.3	123.6	127.7	120.7	126.7	131.7	134.2	135.6
Exports (metric tons)[1]	7.5	7.4	7.4	8.1	8.2	8.5	9.0	8.9	9.6	9.6
Poultry[4]										
Production (metric tons)	39.6	38.0	40.5	43.2	47.5	50.4	52.7	53.5	55.9	57.9
Consumption (metric tons)	38.4	37.0	39.4	42.0	47.0	49.7	51.9	52.5	55.0	57.1
Exports (metric tons)[1]	2.8	2.4	2.8	3.6	4.5	5.1	5.6	5.7	6.0	6.4
Dairy										
Milk production (metric tons)[5]	377.6	378.4	377.6	378.4	380.7	379.8	380.8	383.1	385.8	390.5

-- = Not available. F = forecast. 1. Excludes intra-EU trade but includes intra-FSU trade. 2. Where stocks data are not available, consumption includes stock changes. 3. Stocks data are based on differing marketing years and do not represent levels at a given date. Data not available for all countries. 4. Calendar year data. 1990 data correspond with 1989/90, etc. 5. Data prior to 1989 no longer comparable.

Information contacts: Crops, Ed Allen (202) 694-5288; red meat and poultry, Leland Southard (202) 694-5187; dairy, LaVerne Williams (202) 694-5190

U.S. Agricultural Trade

Table 24—Prices of Principal U.S. Agricultural Trade Products

	Annual			1999	2000					
	1997	1998	1999	Jun	Jan	Feb	Mar	Apr	May	Jun
Export commodities										
Wheat, f.o.b. vessel, Gulf ports ($/bu.)	4.35	3.44	3.04	3.01	2.89	2.99	2.92	2.92	3.03	3.15
Corn, f.o.b. vessel, Gulf ports ($/bu.)	2.98	2.59	2.30	2.36	2.36	2.42	2.42	2.44	2.45	2.12
Grain sorghum, f.o.b. vessel, Gulf ports ($/bu.)	2.89	2.54	2.15	2.22	2.23	2.29	2.33	2.33	2.36	2.01
Soybeans, f.o.b. vessel, Gulf ports ($/bu.)	7.94	6.37	5.02	4.87	5.21	5.36	5.40	5.51	5.65	5.37
Soybean oil, Decatur (¢/lb.)	23.33	25.78	17.51	16.50	15.56	15.09	16.22	17.52	16.75	15.65
Soybean meal, Decatur ($/ton)	266.70	162.74	141.52	139.07	163.41	170.51	175.50	177.53	189.34	177.45
Cotton, 7-market avg. spot (¢/lb.)	69.62	67.04	52.30	53.74	51.92	54.29	57.67	53.76	58.31	54.97
Tobacco, avg. price at auction (¢/lb.)	182.74	179.77	177.82	--	191.02	190.56	179.06	156.98	--	--
Rice, f.o.b., mill, Houston ($/cwt)	20.88	18.95	16.99	17.05	15.55	15.25	15.00	14.85	14.48	14.38
Inedible tallow, Chicago (¢/lb.)	20.75	17.67	12.99	11.49	11.94	10.28	10.25	9.50	10.00	10.00
Import commodities										
Coffee, N.Y. spot ($/lb.)	2.05	1.39	1.05	1.09	1.19	1.15	1.10	0.99	0.99	0.90
Rubber, N.Y. spot (¢/lb.)	55.40	40.57	36.66	34.64	38.16	40.36	38.16	37.80	37.76	37.07
Cocoa beans, N.Y. ($/lb.)	0.69	0.72	0.47	0.48	0.38	0.35	0.38	0.36	0.37	0.38

-- = Not available. Information contacts: Jenny Gonzales (202) 694-5296, Mae Dean Johnson (202) 694-5299.

Table 25—Trade Balance

	Fiscal Year			1999	2000					
	1998	1999	2000 P	Jun	Jan	Feb	Mar	Apr	May	Jun
					$ million					
Exports										
Agricultural	53,730	49,102	50,000	3,806	4,211	4,382	4,668	3,917	4,022	4,058
Nonagricultural	585,826	586,652	--	49,665	48,013	51,251	58,200	53,683	54,235	58,183
Total [1]	639,556	635,754	--	53,471	52,224	55,633	62,868	57,600	58,257	62,241
Imports										
Agricultural	37,007	37,449	39,000	3,285	3,185	3,249	3,679	3,376	3,517	3,311
Nonagricultural	858,893	938,809	--	84,204	83,220	87,813	98,939	90,401	96,429	99,816
Total [2]	895,900	976,258	--	87,489	86,405	91,062	102,618	93,777	99,946	103,127
Trade Balance										
Agricultural	16,723	11,653	11,000	521	1,026	1,133	989	541	505	747
Nonagricultural	-273,067	-352,157	--	-34,539	-35,207	-36,562	-40,739	-36,718	-42,194	-41,633
Total	-256,344	-340,504	--	-34,018	-34,181	-35,429	-39,750	-36,177	-41,689	-40,886

P = Projected. -- = Not available. Fiscal year (Oct. 1-Sep. 30). 1. Domestic exports including Department of Defense shipments (f.a.s. value).
2. Imports for consumption (customs value). *Information contact: Mary Fant (202) 694-5272*

Table 26—Indexes of Real Trade-Weighted Dollar Exchange Rates[1]

	Annual		1999		2000					
	1997	1998	1999	Jun	Jan	Feb	Mar	Apr	May	Jun
					1995 = 100					
Total U.S. Trade	105.5	112.4	110.9	114.8	113.8	115.2	115.0	116.8	118.5	118.8
U.S. markets										
All agricultural trade	103.7	111.4	109.2	119.0	117.0	118.7	117.9	119.4	120.9	121.1
Bulk commodities	107.1	115.9	112.7	117.9	116.4	118.0	117.3	118.8	120.1	120.3
Corn	110.8	121.9	115.8	118.2	114.1	115.6	114.4	115.7	116.4	116.6
Cotton	99.3	112.6	110.1	111.3	113.2	114.1	113.6	114.8	116.8	116.9
Rice	106.2	109.4	108.6	113.5	113.2	114.3	114.5	117.6	117.8	117.4
Soybeans	111.9	121.2	118.1	121.3	119.7	121.8	121.9	123.8	126.1	126.4
Tobacco, raw	117.4	125.5	124.2	127.2	125.9	129.1	128.9	130.5	133.6	133.6
Wheat	102.0	107.1	110.7	113.1	114.3	115.3	115.0	116.1	116.6	117.1
High-value products	106.6	113.0	108.0	119.9	117.6	119.2	118.5	120.0	121.5	121.7
Processed intermediates	106.3	113.2	110.5	116.0	114.8	116.3	116.5	118.0	120.1	120.3
Soymeal	99.1	104.3	103.5	106.5	108.1	108.8	109.3	110.4	112.0	112.3
Soyoil	88.1	87.9	96.2	98.5	102.6	102.8	102.9	103.8	104.4	104.6
Produce and horticulture	109.6	116.8	114.5	118.7	116.9	118.6	118.1	119.9	121.7	121.9
Fruits	109.2	118.9	114.3	118.1	115.2	116.7	115.8	117.4	118.6	118.8
Vegetables	107.3	115.1	112.5	114.2	111.7	112.4	111.6	113.8	114.7	114.9
High-value processed	105.8	111.5	103.8	123.6	120.1	121.9	120.3	121.6	122.6	122.7
Fruit juices	112.6	121.0	117.3	122.0	119.1	121.1	120.1	122.2	123.7	123.8
Poultry	79.6	74.0	61.9	156.3	159.8	160.7	159.0	159.4	159.2	158.9
Red meats	120.5	131.6	118.9	128.9	120.1	123.1	119.6	120.8	121.6	121.6
U.S. competitors										
All agricultural trade	108.3	114.2	115.5	122.5	125.4	127.8	130.3	132.8	136.3	136.8
Bulk commodities	101.5	110.1	109.7	129.6	133.1	134.6	136.0	138.5	140.7	140.7
Corn	108.7	111.3	113.9	121.6	124.5	126.8	128.3	130.4	133.4	133.3
Cotton	105.0	116.0	115.8	131.3	132.8	136.0	135.6	137.3	139.9	139.6
Rice	108.9	123.6	119.3	120.6	122.1	124.0	134.8	136.4	140.4	141.9
Soybeans	93.6	91.7	93.2	131.8	132.1	132.3	131.4	132.6	135.2	135.6
Tobacco, raw	100.3	105.1	104.6	127.7	120.3	119.7	119.3	119.7	120.9	119.4
Wheat	109.5	114.2	116.4	118.8	120.6	123.2	124.5	127.2	130.4	130.7
High-value products	109.6	115.3	116.5	125.8	129.0	131.6	134.6	137.4	141.2	141.8
Processed intermediates	107.2	114.5	115.6	127.2	130.2	132.5	135.2	137.6	141.2	141.6
Soymeal	97.1	95.1	96.1	131.8	131.8	132.1	131.7	133.0	136.4	136.6
Soyoil	99.0	98.3	99.4	123.4	124.0	124.9	124.8	126.2	129.3	129.4
Produce and horticulture	108.3	113.3	115.0	121.1	125.4	127.4	128.7	132.3	134.2	134.5
Fruits	110.0	125.1	122.3	123.2	126.9	129.0	129.6	130.6	133.7	133.9
Vegetables	100.6	102.2	105.0	110.5	114.0	116.0	117.1	119.9	121.8	122.1
High-value processed	111.4	116.4	117.5	126.3	129.3	132.2	136.5	139.3	143.8	144.7
Fruit juices	111.4	117.1	118.1	122.2	125.0	127.1	128.2	130.4	133.6	133.9
Poultry	104.0	106.9	107.7	122.2	125.3	127.4	128.9	131.0	134.7	135.3
Red meats	109.7	114.5	116.2	121.3	123.2	125.8	136.5	139.6	144.7	146.4
U.S. suppliers										
All agricultural trade	101.2	109.6	109.3	112.5	114.7	115.2	115.7	118.8	119.9	120.2
High-value products	101.3	107.2	107.9	111.2	113.0	113.6	114.2	117.4	118.4	118.8
Processed intermediates	102.5	110.3	110.3	113.9	115.2	116.0	117.5	119.8	121.9	122.3
Grains and feeds	105.1	112.5	112.9	112.8	112.6	113.4	113.6	115.9	117.8	118.1
Vegetable oils	106.4	122.4	119.3	120.1	122.2	123.8	124.5	126.5	129.7	129.7
Produce and horticulture	93.7	97.6	99.1	100.3	103.3	102.1	101.0	106.3	103.0	103.3
Fruits	91.7	95.7	96.0	97.2	96.1	95.1	94.3	98.8	97.1	97.2
Vegetables	86.3	88.7	84.0	83.6	81.5	80.6	79.7	81.7	81.9	82.1
High-value processed	104.3	110.0	110.9	115.0	116.4	117.8	118.9	121.5	124.1	124.4
Cocoa and products	105.5	117.8	119.7	123.7	132.2	132.9	133.3	136.0	137.9	137.4
Coffee and products	93.1	97.0	100.0	109.9	114.7	113.4	111.8	114.2	114.4	114.9
Dairy products	106.5	111.7	112.0	120.9	123.5	125.5	131.6	134.4	139.0	140.8
Fruit juices	99.1	100.9	101.5	121.4	122.1	122.2	122.0	124.5	126.2	126.5
Meats	95.9	102.1	105.4	104.9	107.3	107.8	155.4	160.6	167.3	173.8

Real indexes adjust nominal exchange rates for relative rates of inflation among countries. A higher value means the dollar has appreciated. The weights used for "total U.S. trade" index are based on U.S. total merchandise exports to the largest 85 trading partners. Weights are based on relative importance of major U.S. customers, competitors in world markets, and suppliers to the U.S. Indexes are subject to revision for up to 1 year due to delayed reporting by some countries. High-value products are total agricultural products minus bulk commodities.
Source: Nominal exchange rates are obtained from the IMF International Financial Statisitics. Exchange rates for the EU-11 are obtained from the Board of Governors of the Federal Reserve System. Full historical series are available back to January 1970 at *http://usda.mannlib.cornell.edu/data-sets/international/88021/*
Information contact: Mathew Shane (202) 694-5282.
1. A major revision to the weighting scheme and commoditity definitions was completed in May 2000.

Table 27—U.S. Agricultural Exports & Imports

	Fiscal Year			Jun		Fiscal Year			Jun	
	1998	1999	2000 P	1999	2000	1998	1999	2000 P	1999	2000
	1,000 units					*$ million*				
Exports										
Animals, live	--	--	--	--	--	538	509	--	22	23
Meats and preps., excl. poultry (mt) [1]	2,064	2,061	1,700	177	201	4,507	4,460	4,800	392	458
Dairy products	--	--	--	--	--	925	897	1,000	77	79
Poultry meats (mt)	2,663	2,377	2,700	212	273	2,347	1,743	1,900	148	185
Fats, oils, and greases (mt)	1,365	1,395	1,200	95	95	655	561	--	35	33
Hides and skins, incl. furskins	--	--	--	--	--	1,358	1,108	1,300	94	154
Cattle hides, whole (no.)	18,992	17,845	--	1,517	2,229	969	844	--	69	118
Mink pelts (no.)	2,990	4,172	--	529	624	83	98	--	12	17
Grains and feeds (mt) [2]	87,289	104,576	--	9,002	8,250	13,961	14,272	13,600	1,187	1,085
Wheat (mt) [3]	25,791	28,806	27,000	2,453	2,405	3,759	3,648	3,600	307	298
Wheat flour (mt)	465	958	1,100	116	72	117	177	--	16	14
Rice (mt)	3,310	3,076	3,100	178	251	1,132	1,010	900	61	51
Feed grains, incl. products (mt) [4]	44,564	58,398	52,300	5,386	3,994	5,187	5,821	5,000	532	408
Feeds and fodders (mt)	11,704	11,800	12,100	737	1,395	2,421	2,252	2,400	157	199
Other grain products (mt)	1,455	1,538	--	132	134	1,345	1,363	--	114	115
Fruits, nuts, and preps. (mt)	3,633	3,439	--	280	332	3,977	3,805	4,300	346	367
Fruit juices, incl. froz. (1,000 hectoliters)	10,658	12,317	--	1,257	1,092	653	735	--	70	67
Vegetables and preps.	--	--	--	--	--	4,168	4,245	2,900	360	384
	208	205	200	13	13	1,448	1,376	1,300	93	88
Cotton, excl. linters (mt) [5]	1,552	884	1,500	57	111	2,517	1,309	1,800	82	148
Seeds (mt)	816	579	--	32	36	827	800	800	35	36
Sugar, cane or beet (mt)	123	158	--	7	6	48	56	--	3	3
Oilseeds and products (mt)	36,074	33,569	35,400	1,820	1,937	10,984	8,606	8,500	451	492
Oilseeds (mt)	--	--	--	--	--	--	--	--	--	--
Soybeans (mt)	23,394	22,974	25,700	978	1,251	6,117	4,748	5,000	193	256
Protein meal (mt)	8,666	6,726	--	566	454	1,975	1,101	--	87	88
Vegetable oils (mt)	3,049	2,642	--	181	163	2,191	1,815	--	118	100
Essential oils (mt)	46	47	--	6	5	533	507	--	41	57
Other	--	--	--	--	--	4,284	4,112	--	369	398
Total	--	--	--	--	--	53,730	49,102	50,000	3,806	4,058
Imports										
Animals, live	--	--	--	--	--	1,670	1,439	1,600	109	124
Meats and preps., excl. poultry (mt)	1,230	1,398	1,600	131	140	2,718	3,088	3,600	295	346
Beef and veal (mt)	857	943	--	93	96	1,761	2,047	--	204	233
Pork (mt)	271	337	--	28	33	686	721	--	62	83
Dairy products	--	--	--	--	--	1,368	1,572	1,600	132	149
Poultry and products	--	--	--	--	--	207	201	--	19	36
Fats, oils, and greases (mt)	80	90	--	11	9	59	63	--	8	7
Hides and skins, incl. furskins (mt)	--	--	--	--	--	184	146	--	10	12
Wool, unmanufactured (mt)	45	29	--	2	1	151	75	--	4	4
Grains and feeds	--	--	--	--	--	2,919	2,943	3,000	263	261
Fruits, nuts, and preps., excl. juices (mt) [6]	7,581	8,171	8,900	759	627	3,982	4,619	5,800	455	372
Bananas and plantains (mt)	4,175	4,418	4,700	410	344	1,214	1,212	1,200	109	103
Fruit juices (1,000 hectoliters)	26,577	31,655	35,800	2,874	2,546	669	772	--	74	69
Vegetables and preps.	--	--	--	--	--	4,249	4,527	4,600	344	357
Tobacco, unmanufactured (mt)	241	217	200	47	34	822	742	600	129	99
Cotton, unmanufactured (mt)	10	144	--	21	3	11	150	--	23	2
Seeds (mt)	257	357	--	14	13	422	457	--	27	28
Nursery stock and cut flowers	--	--	--	--	--	1,082	1,076	1,200	66	69
Sugar, cane or beet (mt)	2,170	1,692	--	160	101	758	606	--	63	30
Oilseeds and products (mt)	4,314	3,899	3,700	362	406	2,243	2,022	1,900	174	187
Oilseeds (mt)	1,028	1,000	--	118	139	371	326	--	30	42
Protein meal (mt)	1,277	1,131	--	102	109	188	147	--	14	14
Vegetable oils (mt)	2,010	1,769	--	142	158	1,684	1,549	--	130	130
Beverages, excl. fruit juices (1,000 hectoliters)	--	--	--	--	--	3,705	4,258	--	402	440
Coffee, tea, cocoa, spices (mt)	2,369	2,520	--	206	224	6,056	5,306	--	417	416
Coffee, incl. products (mt)	1,155	1,294	1,400	107	119	3,587	2,967	2,900	244	247
Cocoa beans and products (mt)	875	865	1,100	60	67	1,701	1,531	1,500	98	98
Rubber and allied gums (mt)	1,162	1,148	1,300	82	122	1,027	739	800	48	85
Other	--	--	--	--	--	2,703	2,645	--	225	219
Total	--	--	--	--	--	37,007	37,449	39,000	3,285	3,311

P=Projection. -- = Not available. Projections are fiscal years (October 1 through September 30) and are from Outlook for U.S. Agricultural Exports. 1998 and 1999 data are from *Foreign Agricultural Trade of the U.S* . 1. Projection includes beef, pork, and variety meat. 2. Projection includes pulses. 3. Value projection includes wheat flour. 4. Projection excludes grain products. 5. Projection includes linters. 6. Value projection includes juice.

Information Contact: Mary Fant (202) 694-5272

Table 28—U.S. Agricultural Exports by Region

Region & country	Fiscal year 1998	Fiscal year 1999	Fiscal year 2000 P	1999 Jun	2000 Jan	2000 Feb	2000 Mar	2000 Apr	2000 May	2000 Jun
					$ million					
Western Europe	8,859	7,531	6,700	453	698	624	577	481	438	423
European Union[1]	8,522	6,960	6,200	414	654	596	557	430	413	408
Belgium-Luxembourg	666	602	--	35	48	43	44	32	41	37
France	536	380	--	20	29	34	21	23	24	18
Germany	1,294	1,056	--	49	89	84	95	94	56	40
Italy	729	574	--	35	77	49	53	48	37	53
Netherlands	1,792	1,585	--	94	150	163	145	83	78	68
United Kingdom	1,300	1,123	--	89	67	92	79	72	87	76
Portugal	186	131	--	4	17	22	8	6	11	4
Spain, incl. Canary Islands	1,132	782	--	45	106	65	46	28	28	42
Other Western Europe	336	570	500	39	44	28	21	51	25	15
Switzerland	236	456	--	21	38	22	15	46	16	9
Eastern Europe	320	190	200	17	9	18	17	10	12	17
Poland	139	73	--	5	2	3	4	3	3	5
Former Yugoslavia	97	47	--	4	3	11	7	3	5	8
Romania	31	18	--	1	0	0	1	1	1	1
Newly Independent States	1,456	816	1,000	85	136	221	70	56	71	56
Russia	1,103	468	600	57	114	189	53	45	59	45
Asia[2]	21,992	20,447	19,100	1,661	1,772	1,858	2,203	1,762	1,832	1,857
West Asia (Mideast)	2,286	1,979	2,300	162	170	209	187	175	171	184
Turkey	658	448	700	50	74	62	55	80	48	51
Iraq	131	9	--	0	--	0	--	--	--	--
Israel, incl. Gaza and W. Bank	389	417	--	37	18	59	31	29	45	47
Saudi Arabia	535	468	500	46	33	44	30	32	35	38
South Asia	626	500	400	32	22	31	29	27	36	34
Bangladesh	114	165	--	9	3	5	9	6	6	4
India	163	190	--	18	17	18	14	17	11	19
Pakistan	275	89	--	3	1	1	4	3	9	5
China	1,514	1,012	1,300	34	98	110	261	97	80	141
Japan	9,469	8,940	9,200	730	802	846	906	754	879	817
Southeast Asia	2,288	2,213	2,400	180	200	205	258	209	169	193
Indonesia	529	498	600	59	41	46	69	61	28	44
Philippines	751	734	800	68	65	67	84	78	73	73
Other East Asia	5,808	5,803	5,800	524	482	456	562	500	499	488
Korea, Rep.	2,258	2,483	2,600	225	228	219	240	209	216	203
Hong Kong	1,568	1,264	1,200	104	87	92	106	96	96	118
Taiwan	1,975	2,046	2,000	194	165	144	216	195	187	167
Africa	2,174	2,160	2,200	190	162	176	178	115	126	206
North Africa	1,475	1,468	1,500	107	117	136	93	66	82	136
Morocco	139	162	--	9	9	23	10	6	11	11
Algeria	281	223	--	12	21	13	24	5	22	27
Egypt	939	1,001	1,000	83	84	95	50	48	40	97
Sub-Sahara	699	692	700	82	45	40	86	49	44	70
Nigeria	140	176	--	19	16	11	8	13	12	12
S. Africa	193	165	--	18	14	8	13	6	11	12
Latin America and Caribbean	11,362	10,502	10,400	743	800	858	916	829	836	770
Brazil	566	369	300	16	23	22	41	22	21	18
Caribbean Islands	1,487	1,453	--	110	103	120	121	112	108	121
Central America	1,137	1,209	--	83	79	85	93	92	86	80
Colombia	606	467	--	48	40	25	40	32	38	42
Mexico	5,956	5,675	6,000	393	447	501	551	481	517	439
Peru	314	347	--	30	31	10	16	19	5	13
Venezuela	516	458	400	33	25	47	31	37	32	27
Canada	7,022	6,957	7,500	615	595	593	658	614	655	672
Oceania	545	499	500	43	40	34	47	36	32	39
Total	53,730	49,102	50,000	3,806	4,211	4,382	4,668	3,917	4,022	4,058

P = projection. -- = Not available. Based on fiscal year beginning October 1 and ending September 30. 1. Austria, Finland, and Sweden are included in the European Union. 2. Asia forecasts exclude West Asia (Mideast). NOTE: Adjusted for transhipments through Canada for 1998 and 1999 through December 1999, but transhipments are not distributed by country as previously for 2000. *Information contact: Mary Fant (202) 694-5272*

Farm Income

Table 29—Value Added to the U.S. Economy by the Agricultural Sector

		1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
						$ billion					
	Final crop output	81.0	89.0	82.3	100.4	95.8	115.4	112.1	102.0	93.2	95.6
	Food grains	7.3	8.5	8.2	9.5	10.4	10.7	10.1	8.7	7.3	6.8
	Feed crops	19.3	20.1	20.2	20.3	24.5	27.2	27.1	22.9	19.8	20.1
	Cotton	5.2	5.2	5.2	6.7	6.9	7.0	6.3	6.0	4.7	5.4
	Oil crops	12.7	13.3	13.2	14.7	15.5	16.3	19.7	17.2	13.6	14.4
	Tobacco	2.9	3.0	2.9	2.7	2.5	2.8	2.9	3.0	2.3	1.8
	Fruits and tree nuts	9.9	10.2	10.3	10.3	11.1	11.9	13.1	11.7	12.9	11.3
	Vegetables	11.6	11.8	13.7	14.2	15.0	14.4	15.0	15.3	15.3	16.0
	All other crops	13.1	13.7	13.7	14.7	15.0	15.8	16.9	17.3	17.5	18.6
	Home consumption	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	Value of inventory adjustment[1]	-1.2	3.2	-5.3	7.2	-5.3	9.1	0.9	-0.4	-0.2	1.0
	Final animal output	87.3	87.1	92.0	89.7	87.7	92.1	96.5	94.3	95.0	99.6
	Meat animals	50.1	47.7	51.0	46.7	44.9	44.2	49.7	43.6	45.6	51.6
	Dairy products	18.0	19.7	19.3	20.0	19.9	22.8	20.9	24.3	23.2	21.4
	Poultry and eggs	15.2	15.5	17.3	18.5	19.1	22.4	22.2	22.8	22.9	23.5
	Miscellaneous livestock	2.5	2.6	2.9	3.1	3.3	3.6	3.7	3.8	3.6	3.6
	Home consumption	0.5	0.5	0.4	0.4	0.4	0.3	0.4	0.3	0.4	0.4
	Value of inventory adjustment[1]	1.0	1.0	1.1	1.1	0.2	-1.1	-0.4	-0.6	-0.7	-1.0
	Services and forestry	15.4	15.3	17.1	18.1	19.9	20.8	22.5	24.6	27.1	27.0
	Machine hire and customwork	1.8	1.8	1.9	2.1	1.9	2.1	2.6	2.3	2.0	2.2
	Forest products sold	1.8	2.2	2.5	2.7	2.8	2.6	2.9	2.8	2.9	2.9
	Other farm income	4.7	4.1	4.6	4.3	5.8	6.2	6.9	8.7	11.3	11.0
	Gross imputed rental value of farm dwellings	7.2	7.2	8.1	9.0	9.4	9.9	10.1	10.8	10.9	11.0
	Final agricultural sector output[2]	183.7	191.4	191.4	208.2	203.5	228.4	231.2	220.8	215.3	222.2
Minus	Intermediate consumption outlays:	94.6	93.4	100.7	104.9	109.7	113.2	120.9	118.7	121.0	125.6
	Farm origin	38.6	38.6	41.3	41.3	41.8	42.7	46.9	44.9	45.7	46.3
	Feed purchased	19.3	20.1	21.4	22.6	23.8	25.2	26.3	25.0	24.5	24.1
	Livestock and poultry purchased	14.1	13.6	14.7	13.3	12.5	11.3	13.8	12.7	13.9	14.8
	Seed purchased	5.1	4.9	5.2	5.4	5.5	6.2	6.7	7.2	7.2	7.4
	Manufactured inputs	23.2	22.7	23.1	24.4	26.2	28.6	29.2	28.3	27.3	29.9
	Fertilizers and lime	8.7	8.3	8.4	9.2	10.0	10.9	10.9	10.7	9.9	10.2
	Pesticides	6.3	6.5	6.7	7.2	7.7	8.5	9.0	9.1	8.6	8.7
	Petroleum fuel and oils	5.6	5.3	5.3	5.3	5.4	6.0	6.2	5.6	5.8	8.1
	Electricity	2.6	2.6	2.7	2.7	3.0	3.2	3.0	2.9	3.0	2.9
	Other intermediate expenses	32.8	32.1	36.2	39.2	41.7	41.8	44.9	45.5	48.0	49.4
	Repair and maintenance of capital items	8.6	8.5	9.2	9.1	9.5	10.3	10.4	10.4	10.5	10.6
	Machine hire and customwork	3.5	3.8	4.4	4.8	4.8	4.7	4.9	5.5	5.1	5.3
	Marketing, storage, and transportation	4.7	4.5	5.6	6.8	7.2	6.9	7.1	6.7	7.3	7.8
	Contract labor	1.6	1.7	1.8	1.8	2.0	2.1	2.6	2.4	2.6	2.7
	Miscellaneous expenses	14.3	13.6	15.2	16.7	18.3	17.8	19.8	20.5	22.6	23.0
Plus	Net government transactions:	2.1	2.7	6.9	1.1	0.2	0.2	0.2	4.6	13.1	15.1
	+ Direct government payments	8.2	9.2	13.4	7.9	7.3	7.3	7.5	12.2	20.6	22.7
	- Motor vehicle registration and licensing fees	0.3	0.4	0.4	0.4	0.5	0.4	0.5	0.5	0.4	0.4
	- Property taxes	5.8	6.1	6.2	6.3	6.6	6.7	6.9	7.2	7.1	7.2
	Gross value added	91.2	100.6	97.5	104.5	94.0	115.4	110.4	106.7	107.4	111.7
Minus	Capital consumption	18.2	18.3	18.4	18.6	18.9	19.2	19.3	19.4	19.9	19.8
	Net value added[2]	73.0	82.3	79.2	85.8	75.1	96.2	91.1	87.2	87.6	91.9
Minus	Factor payments:	34.4	34.4	34.6	36.6	37.9	41.3	42.5	43.1	44.0	45.8
	Employee compensation (total hired labor)	12.3	12.3	13.2	13.5	14.3	15.3	16.0	16.9	17.5	18.4
	Net rent received by nonoperator landlords	9.9	11.1	10.7	11.5	11.0	13.0	12.9	12.0	13.0	13.3
	Real estate and non-real estate interest	12.1	11.0	10.6	11.5	12.6	13.0	13.5	14.2	13.6	14.1
	Net farm income[2]	38.7	47.9	44.5	49.2	37.2	54.9	48.6	44.1	43.5	46.1

Values in last two columns are preliminary or forecast. 1. A positive value of inventory change represents current-year production not sold by December 1. A negative value is an offset to production from prior years included in current-year sales. 2. Final sector output is the gross value of commodities and services produced within a year. Net value added is the sector's contribution to the National economy and is the sum of income from production earned by all factors of production. Net farm income is farm operators' share of income from the sector's production activities. The concept presented is consistent with that employed by the Organization for Economic Cooperation and Development. *Information contact: Roger Strickland (202) 694-5592 or rogers@ers.usda.gov*
To confirm that this table contains the current forecast, go to http://www.ers.usda.gov/briefing/farmincome/fore/fore.htm

Table 30—Farm Income Statistics

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
					$ billion					
Cash Income statement:										
1. Cash receipts	167.9	171.3	177.9	181.3	188.1	199.1	207.6	196.8	188.6	194.6
Crops[1]	82.1	85.7	87.4	93.1	101.0	106.2	111.1	102.2	93.2	94.4
Livestock	85.8	85.6	90.4	88.2	87.1	93.0	96.5	94.5	95.4	100.2
2. Direct Government payments	8.2	9.2	13.4	7.9	7.3	7.3	7.5	12.2	20.6	22.7
3. Farm-related income[2]	8.3	8.1	9.0	9.1	10.5	11.0	12.4	13.8	16.2	16.0
4. Gross cash income (1+2+3)	184.4	188.6	200.3	198.2	205.8	217.4	227.5	222.8	225.4	233.4
5. Cash expenses[3]	134.0	133.3	141.0	147.1	153.2	159.9	169.0	167.8	170.7	177.2
6. Net cash income (4-5)	50.4	55.2	59.3	51.1	52.6	57.5	58.5	54.9	54.7	56.2
Farm income statement:										
7. Gross cash income (4)	184.4	188.6	200.3	198.2	205.8	217.4	227.5	222.8	225.4	233.4
8. Noncash income[4]	7.8	7.8	8.7	9.6	9.9	10.3	10.6	11.3	11.4	11.5
9. Value of inventory adjustment	-0.2	4.2	-4.2	8.3	-5.0	8.0	0.5	-1.0	-0.9	0.0
10. Gross farm income (7+8+9)	192.0	200.5	204.8	216.1	210.7	235.7	238.7	233.1	235.9	244.9
11. Total production expenses	153.3	152.6	160.2	166.8	173.5	180.8	190.0	189.0	192.4	198.8
12. Net farm income (10-11)	38.7	47.9	44.5	49.2	37.2	54.9	48.6	44.1	43.5	46.1

Values for last 2 years are preliminary or forecast. Numbers in parentheses indicate the combination of items required to calculate an item. Totals may not add due to rounding. 1. Includes commodities placed under CCC loans and profits made on loans redeemed. 2. Income from custom labor, machine hire, recreational activities, forest product sales, and other farm sources. 3. Excludes depreciation and perquisites to hired labor. Excludes farm operator dwellings. 4. Value of farm products consumed on farms where produced plus the imputed rental value of farm dwellings. *Information contact: Roger Strickland (202) 694-5592 or rogers@ers.usda.gov*
To confirm that this table contains the current forecast, go to http://www.ers.usda.gov/briefing/farmincome/fore/fore.htm

Table 31—Average Income to Farm Operator Households[1]

	1992	1993	1994	1995	1996	1997	1998	1999	2000
					$ per farm				
Net cash farm business income[2]	11,320	11,248	11,389	11,218	13,502	12,676	14,357	--	--
Less depreciation[3]	5,187	6,219	6,466	6,795	6,906	6,578	7,409	--	--
Less wages paid to operator[4]	216	454	425	522	531	513	637	--	--
Less farmland rental income[5]	360	534	701	769	672	568	543	--	--
Less adjusted farm business income due to other household(s)[6]	961	872	815	649	1,094	*1,505	1,332	--	--
					$ per farm operator household				
Equals adjusted farm business income	4,596	3,168	2,981	2,484	4,300	3,513	4,436	--	--
Plus wages paid to operator	216	454	425	522	531	513	637	--	--
Plus net income from farmland rental[7]	360	--	--	1,053	1,178	945	868	--	--
Equals farm self-employment income	5,172	3,623	3,407	4,059	6,009	4,971	5,941	--	--
Plus other farm-related earnings[8]	2,008	1,192	970	661	1,898	1,234	1,165	--	--
Equals earnings of the operator household from farming activities	7,180	4,815	4,376	4,720	7,906	6,205	7,106	6,359	4,589
Plus earnings of the operator household from off-farm sources[9]	35,731	35,408	38,092	39,671	42,455	46,358	52,628	57,988	60,058
Equals average farm operator household income	42,911	40,223	42,469	44,392	50,361	52,562	59,734	64,347	64,645
					$ per U.S. household				
U.S. average household income[10]	38,840	41,428	43,133	44,938	47,123	49,692	51,855	--	--
					Percent				
Average farm operator household income as percent of U.S. average household income	110.5	97.1	98.5	98.8	106.9	105.8	115.2	--	--
Average operator household earnings from farming activities as percent of average operator household income	16.7	12.0	10.3	10.6	15.7	11.8	11.9	--	--

-- = Not available. Values in last two columns are preliminary or forecast. 1.This table derives farm operator household income estimates from the Agricultural Resource Management Study (ARMS) that are consistent with Current Population Survey (CPS) methodology. The CPS, conducted by the Bureau of the Census, is the source of official U.S. household income statistics. The CPS defines income to include any income received as cash. The CPS definition departs from a strictly cash concept by including depreciation as an expense that farm operators and other self-employed people subtract from gross receipts when reporting net cash income. 2. A component of farm-sector income. Excludes income of contractors and landlords as well as the income of farms organized as nonfamily corporations or cooperatives, and farms run by a hired manager. Includes income of farms organized as proprietorships, partnerships, and family corporations. 3. Consistent with the CPS definition of self-employed income, reported depreciation expenses are subtracted from net cash farm income. The ARMS collects data on farm business depreciation used for tax purposes. 4. Wages paid to the operator are excluded because they are not shared among other households that have claims on farm business income. These wages are added to the operator household's adjusted farm business income to obtain farm self-employment income. 5. Gross rental income is excluded because net rental income from farm operation is added below to income received by the household. 6. More than one household may have a claim on the income of a farm business. On average, 1.1 households share the income of a farm business. 7. Includes net rental income from the farm business. Also includes net rental income from farmland held by household members that is not part of the farm business. In 1991 and 1992, gross rental income from the farm business was used because net rental income data were not collected. In 1993 and 1994, net rental income data were collected as part of off-farm income. 8. Wages paid to other operator household members by the farm business, and net income from a farm business other than the one surveyed. In 1996, also includes the value of commodities provided to household members for farm work. 9. Wages, salaries, net income from nonfarm businesses, interest, dividends, transfer payments, etc. In 1993 and 1994, also includes net rental income from farmland. 10. From the CPS. Sources: U.S. Department of Agriculture, Economic Research Service, 1992, 1993, 1994, and 1995 Farm Costs and Returns Survey (FCRS), and 1996 and 1997 Agricultural Resource Management Study for farm operator household data. U.S. Department of Commerce, Bureau of the Census Current Population Survey (PCS), for average household income. *Information contact: Bob Hoppe (202) 694-5572 or rhoppe@ers.usda.gov*

Table 32—Balance Sheet of the U.S. Farming Sector

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
					$ billion					
Farm assets	844.2	868.3	910.2	935.5	966.7	1,003.9	1,051.3	1,084.6	1,118.5	1,134.8
Real estate	624.8	640.8	677.6	704.1	740.5	769.5	808.2	841.8	866.2	887.0
Livestock and poultry[1]	68.1	71.0	72.8	67.9	57.8	60.3	67.1	63.4	73.1	67.0
Machinery and motor vehicles	85.9	85.4	86.5	87.5	88.5	88.9	89.0	88.6	86.9	86.3
Crops stored[2,3]	22.2	24.2	23.3	23.3	27.4	31.7	32.2	30.1	30.0	30.0
Purchased inputs	2.6	3.9	3.8	5.0	3.4	4.4	5.1	5.3	5.5	5.6
Financial assets	40.5	43.1	46.3	47.6	49.1	49.1	49.7	55.4	53.0	55.0
Total farm debt	139.2	139.1	142.0	146.8	150.8	156.1	165.4	172.7	176.4	176.4
Real estate debt[3]	74.9	75.4	76.0	77.7	79.3	81.7	85.4	89.6	94.2	95.5
Non-real estate debt[4]	64.3	63.6	65.9	69.1	71.5	74.4	80.1	83.1	82.2	81.0
Total farm equity	705.0	729.3	768.3	788.7	815.9	847.8	886.2	891.4	942.1	958.4
					Percent					
Selected ratios										
Debt to equity	19.8	19.1	18.5	18.6	18.5	18.4	18.7	19.4	18.7	18.4
Debt to assets	16.5	16.0	15.6	15.7	15.6	15.5	15.7	15.9	15.8	15.5

Values in the last two columns are preliminary or forecast. 1. As of December 31. 2. Non-CCC crops held on farms plus value above loan rates for crops held under CCC. 3. Includes CCC storage and drying facilities loans, but excludes debt on operator dwellings. 4. Excludes debt for nonfarm purposes. *Information contact: Ken Erickson (202) 694-5565 or erickson@ers.usda.gov*
To confirm that this table contains the current forecast, go to http://www.ers.usda.gov/briefing/farmincome/fore/fore.htm

Table 33—Cash Receipts from Farming

	Annual			1999			2000			
	1997	1998	1999P	May	Dec	Jan	Feb	Mar	Apr	May
					$ million					
Commodity sales[1]	207,596	196,575	188,610	14,009	17,537	15,200	13,337	15,208	13,664	14,263
Livestock and products	96,463	94,112	95,463	8,252	7,632	7,559	7,947	8,717	7,670	8,111
Meat animals	49,681	43,336	45,600	4,109	3,473	3,983	4,368	4,906	3,919	4,374
Dairy products	20,940	24,114	23,204	2,050	2,001	1,563	1,685	1,805	1,724	1,781
Poultry and eggs	22,260	22,942	22,942	1,862	1,926	1,729	1,668	1,762	1,803	1,725
Other	3,581	3,719	3,717	231	232	284	226	244	223	231
Crops	111,134	102,463	93,146	5,757	9,905	7,641	5,390	6,491	5,994	6,152
Food grains	10,411	8,892	7,292	355	493	517	283	462	270	278
Feed crops	27,048	22,666	19,752	952	2,269	2,483	1,441	1,643	905	959
Cotton (lint and seed)	6,345	6,101	4,696	93	1,378	246	235	155	61	75
Tobacco	2,874	2,803	2,273	0	558	290	106	40	9	0
Oil-bearing crops	19,802	17,483	13,555	520	1,133	1,321	754	963	625	582
Vegetables and melons	14,653	15,145	15,164	1,579	800	972	773	1,113	1,248	1,865
Fruits and tree nuts	13,134	12,238	12,975	765	1,423	719	741	582	896	898
Other	16,866	17,136	17,441	1,493	1,851	1,093	1,058	1,532	1,979	1,494
Government payments	7,495	12,209	20,594	219	2,143	2,607	1,151	946	1,057	247
Total	215,092	208,784	209,204	14,228	19,680	17,807	14,489	16,154	14,721	14,510

Annual values for the most recent year are preliminary. 1. Sales of farm products include receipts from commodities placed under nonrecourse CCC loans, plus additional gains realized on redemptions during the period. *Information contacts: Larry Traub (202) 694-5593 or ltraub@ers.usda.gov*
To receive current monthly cash receipts via e-mail contact Larry Traub.

Table 34—Cash Receipts from Farm Marketings, by State

Region and State	Livestock and products				Crops[1]				Total[1]			
	1998	1999	Apr 1999	May 2000	1998	1999	Apr 1999	May 2000	1998	1999	Apr 1999	May 2000
						$ million						
North Atlantic												
Maine	295	286	22	22	215	229	27	15	510	515	49	36
New Hampshire	69	63	5	6	86	90	10	8	155	153	16	13
Vermont	463	473	36	38	71	68	9	6	534	541	45	44
Massachusetts	108	101	9	9	314	295	13	14	422	396	22	23
Rhode Island	9	8	1	1	40	39	5	3	49	48	5	4
Connecticut	184	180	14	14	298	302	27	21	482	482	40	35
New York	2,092	2,043	152	163	1,055	1,054	73	53	3,146	3,097	225	216
New Jersey	219	187	11	12	609	554	48	43	828	740	60	55
Pennsylvania	2,909	2,877	215	219	1,252	1,193	101	82	4,161	4,070	316	301
North Central												
Ohio	1,854	1,786	154	144	3,064	2,643	171	148	4,918	4,429	325	292
Indiana	1,632	1,581	146	123	2,899	2,792	131	121	4,531	4,373	277	244
Illinois	1,574	1,524	153	152	6,448	5,233	282	290	8,022	6,757	436	442
Michigan	1,320	1,331	106	108	2,186	2,139	188	120	3,506	3,470	294	228
Wisconsin	4,491	4,149	303	316	1,610	1,447	71	66	6,101	5,596	374	381
Minnesota	3,773	3,548	294	326	4,102	3,513	172	162	7,875	7,061	466	488
Iowa	4,753	4,712	433	474	6,300	5,004	303	273	11,053	9,716	736	747
Missouri	2,469	2,477	196	230	2,285	1,779	82	82	4,754	4,256	278	312
North Dakota	555	647	58	63	2,359	2,112	98	91	2,913	2,759	155	155
South Dakota	1,549	1,830	154	175	1,855	1,709	75	78	3,404	3,539	228	252
Nebraska	5,124	5,425	484	555	3,906	3,130	147	126	9,030	8,555	631	681
Kansas	4,539	5,009	398	460	3,408	2,607	88	110	7,946	7,616	486	569
Southern												
Delaware	609	566	47	46	167	153	8	7	776	718	55	54
Maryland	942	937	78	80	571	544	53	41	1,513	1,481	132	120
Virginia	1,565	1,580	130	136	766	704	33	28	2,332	2,283	163	164
West Virginia	335	334	29	27	61	53	2	2	396	387	31	29
North Carolina	3,956	3,850	346	336	3,233	2,838	179	181	7,190	6,688	525	517
South Carolina	764	773	63	63	733	633	39	34	1,497	1,406	102	97
Georgia	3,400	3,334	269	258	2,017	1,907	95	128	5,418	5,241	363	386
Florida	1,390	1,363	87	86	5,573	5,702	735	791	6,963	7,066	822	877
Kentucky	2,171	2,158	96	109	1,603	1,298	23	24	3,773	3,456	119	134
Tennessee	1,039	1,011	82	88	1,166	963	39	33	2,205	1,974	121	121
Alabama	2,587	2,777	210	199	709	662	42	35	3,296	3,438	252	233
Mississippi	2,164	2,143	172	166	1,271	1,031	35	27	3,436	3,174	206	193
Arkansas	3,283	3,397	285	267	2,141	1,863	38	42	5,423	5,259	324	308
Louisiana	631	620	52	60	1,236	1,228	30	23	1,868	1,848	83	83
Oklahoma	2,803	3,135	245	264	962	855	41	38	3,765	3,991	286	302
Texas	8,149	8,480	692	816	5,005	4,572	257	242	13,154	13,052	949	1,058
Western												
Montana	883	928	64	71	924	789	53	34	1,808	1,716	118	105
Idaho	1,585	1,603	122	133	1,742	1,744	139	129	3,327	3,347	261	262
Wyoming	680	680	51	44	168	172	3	2	848	852	55	47
Colorado	2,842	3,016	217	233	1,529	1,338	95	95	4,371	4,354	312	328
New Mexico	1,420	1,441	124	127	521	513	24	43	1,941	1,953	147	170
Arizona	921	987	76	97	1,410	1,191	68	145	2,331	2,178	145	242
Utah	723	724	54	55	261	243	24	12	984	967	78	67
Nevada	199	216	19	21	149	118	9	5	348	334	28	26
Washington	1,743	1,658	130	118	3,413	3,275	212	175	5,156	4,933	342	293
Oregon	762	790	63	69	2,199	2,262	133	104	2,961	3,052	196	173
California	6,526	6,714	512	525	18,145	18,087	1,423	1,786	24,671	24,801	1,935	2,311
Alaska	27	29	2	2	18	19	1	1	44	48	3	3
Hawaii	90	86	7	8	423	447	35	35	514	533	42	42
U.S.	94,112	95,463	7,670	8,111	102,463	93,146	5,994	6,152	196,575	188,610	13,664	14,263

Annual values for the most recent year are preliminary. Estimates as of end of current month. Totals may not add because of rounding. 1. Sales of farm products include receipts from commodities placed under nonrecourse CCC loans, plus additional gains realized on redemptions during the period.
Information contact: Larry Traub (202) 694-5593 or ltraub@ers.usda.gov. To receive current monthly cash receipts via e-mail, contact Larry Traub.

Table 35—CCC Net Outlays by Commodity & Function

	Fiscal year									
	1992	1993	1994	1995	1996	1997	1998	1999	2000 E	2001 E
	$ million									
Commodity/Program										
Feed grains:										
Corn	2,105	5,143	625	2,090	2,021	2,587	2,873	5,402	9,696	3,712
Grain sorghum	190	410	130	153	261	284	296	502	942	252
Barley	174	186	202	129	114	109	168	224	393	128
Oats	32	16	5	19	8	8	17	41	63	55
Corn and oat products	9	10	10	1	0	0	0	0	1	0
Total feed grains	2,510	5,765	972	2,392	2,404	2,988	3,354	6,169	11,095	4,147
Wheat and products	1,719	2,185	1,729	803	1,491	1,332	2,187	3,435	5,417	1,688
Rice	715	887	836	814	499	459	491	911	1,729	769
Upland cotton	1,443	2,239	1,539	99	685	561	1,132	1,882	4,206	1,700
Tobacco	29	235	693	-298	-496	-156	376	113	301	25
Dairy	232	253	158	4	-98	67	291	480	685	149
Soybeans	-29	109	-183	77	-65	5	139	1,289	2,725	3,325
Peanuts	41	-13	37	120	100	6	-11	21	42	60
Sugar	-19	-35	-24	-3	-63	-34	-30	-51	141	90
Honey	17	22	0	-9	-14	-2	0	2	1	3
Wool and mohair	191	179	211	108	55	0	0	10	7	-6
Operating expense[1]	6	6	6	6	6	6	5	4	60	5
Interest expenditure	532	129	-17	-1	140	-111	76	210	626	707
Export programs[2]	1,459	2,193	1,950	1,361	-422	125	212	165	329	691
1988-2000 Disaster/tree/ livestock assistance	1,054	944	2,566	660	95	130	3	2,241	1,549	26
Conservation Reserve Program	0	0	0	0	2	1,671	1,693	1,462	1,587	1,657
Other conservation programs	0	0	0	0	7	105	197	292	382	355
Other	-162	949	-137	-103	320	104	28	588	1,459	1,004
Total	9,738	16,047	10,336	6,030	4,646	7,256	10,143	19,223	32,341	16,395
Function										
Price support loans (net)	584	2,065	527	-119	-951	110	1,128	1,455	1,947	1,248
Cash direct payments:[3]										
Production flexibility contract	0	0	0	0	5,141	6,320	5,672	5,476	5,049	4,057
Market loss assistance	0	0	0	0	0	0	0	3,011	11,054	0
Deficiency	5,491	8,607	4,391	4,008	567	-1,118	-7	-3	0	0
Dairy termination	2	0	0	0	0	0	0	0	0	0
Loan deficiency	214	387	495	29	0	0	478	3,360	6,387	5,259
Oilseed	0	0	0	0	0	0	0	0	463	500
Cotton user marketing	140	114	149	88	34	6	416	280	491	355
Other	0	35	22	9	61	1	0	1	476	520
Conservation Reserve Program	0	0	0	0	2	1,671	1,693	1,435	1,551	1,657
Other conservation programs	0	0	0	0	0	85	156	247	331	302
Noninsured Assistance (NAP)	0	0	0	0	2	52	23	54	75	177
Total direct payments	5,847	9,143	5,057	4,134	5,807	7,017	8,431	13,861	25,877	12,827
1988-99 crop disaster	960	872	2,461	577	14	2	-2	1,913	1,299	0
Emergency livestock/tree/DRAP livestock indemn/forage assist.	94	72	105	83	81	128	5	328	250	26
Purchases (net)	321	525	293	-51	-249	-60	207	668	784	57
Producer storage payments	14	9	12	23	0	0	0	0	0	0
Processing, storage, and transportation	185	136	112	72	51	33	38	62	75	75
Export donations ocean transportation	139	352	156	50	69	34	40	323	617	161
Operating expense[1]	6	6	6	6	6	6	5	4	60	5
Interest expenditure	532	129	-17	-1	140	-111	76	210	626	707
Export programs[2]	1,459	2,193	1,950	1,361	-422	125	212	165	329	691
Other	-403	545	-326	-105	100	-28	3	234	477	598
Total	9,738	16,047	10,336	6,030	4,646	7,256	10,143	19,223	32,341	16,395

1/ Does not include CCC Transfers to General Sales Manager. 2/ Includes Export Guarantee Program, Direct Export Credit Program, CCC Transfers to the General Sales Manager, Market Access (Promotion) Program, starting in FY 1991 and starting in FY 1992 the Export Guarantee Program - Credit Reform, Export Enhancement Program, Dairy Export Incentive Program, & Technical Assistance to Emerging Markets, and starting in FY 2000 Foreign Market Development Cooperative Program and Quality Samples Program. 3/ Approximately $1.5 billion in benefits to farmers under the Disaster Assistance Act of 1989 were paid in generic certificates and were not recorded directly as disaster assistance outlays. 4/ Includes cash payments only. Excludes generic certificates in FY 86-96. E= Estimated in FY 2001 Mid-Session Review Budget which was released on June 26, 2000 based on April 2000 supply & demand estimates. The CCC outlays shown for 1996-2002 include the impact of the Federal Agriculture Improvement and Reform Act of 1996, which was enacted on April 4, 1996, and FY 2000 and FY 2001 outlays include the impact of the Agricultural Risk Protection Act of 2000, which was enacted on June 20, 2000. Minus (-) indicates a net receipt (excess of repayments or other receipts over gross outlays of funds). *Information contact: Richard Pazdalski Farm Service Agency-Budget at (202) 720-3675 or Richard_Pazdalski@wdc.fsa.usda.gov.*

Food Expenditures

Table 36—Food Expenditures

	Annual			2000			Year-to-date cumulative		
	1997	1998	1999	May	Jun	Jul	May	Jun	Jul
				$ billion					
Sales[1]									
At home[2]	383.8	392.3	407.3	36.8	37.3	35.6	173.0	210.3	245.9
Away from home[3]	309.5	322.1	343.7	32.2	32.9	33.5	151.6	184.4	217.9
				1998 $ billion					
Sales[1]									
At home[2]	392.4	392.3	397.8	35.4	35.9	34.1	167.3	203.2	237.3
Away from home[3]	317.4	322.1	335.3	30.8	31.4	31.9	145.5	176.9	208.8
				Percent change from year earlier ($ billion)					
Sales[1]									
At home[2]	3.8	2.2	3.8	3.0	10.7	0.5	6.2	7.0	6.0
Away from home	5.9	4.1	6.7	4.8	11.4	8.3	12.7	12.4	11.8
				Percent change from year earlier (1998 $ billion)					
Sales[1]									
At home[2]	-0.2	0.0	1.4	5.2	8.3	-2.2	9.1	8.9	7.2
Away from home[3]	3.0	1.5	4.1	8.1	8.8	5.7	16.3	14.9	13.4

-- = Not available. 1. Food only (excludes alcoholic beverages). Not seasonally adjusted. 2. Excludes donations and home production. 3. Excludes donations, child nutrition subsidies, and meals furnished to employees, patients, and inmates. *Information contact: Annette Clauson (202) 694-5389*
Note: This table differs from Personal Consumption Expenditures (PCE), table 2, for several reasons: (1) this series includes only food, excluding alcoholic beverages and pet food which are included in PCE; (2) this series is not seasonally adjusted, whereas PCE is seasonally adjusted at annual rates; (3) this series reports sales only, but PCE includes food produced and consumed on farms and food furnished to employees; (4) this series includes all sales of meals and snacks, while PCE includes only purchases using personal funds, excluding business travel and entertainment. For a more complete discussion of the differences, see "Developing an Integrated Information System for the Food Sector," ERS Agr. Econ. Rpt. No. 575, Aug. 1987.

Transportation

Table 37—Rail Rates; Grain & Fruit-Vegetable Shipments

	Annual			1999	2000					
	1997	1998	1999	Jun	Jan	Feb R	Mar	Apr	May	Jun P
Rail freight rate index[1]										
(Dec. 1984=100)										
All products	112.1	113.4	113.0	113.1	113.9	113.9	114.0	114.2	114.6	115.0
Farm products	120.3	123.9	121.8	121.1	122.8	122.4	122.3	121.5	121.7	121.7
Grain food products	107.6	107.4	99.6	99.3	99.7	99.7	100.4	99.5	100.5	100.5
Grain shipments										
Rail carloadings (1,000 cars)[2]	23.2	22.8	24.4	22.4	23.7	25.5	25.0	22.4	20.1	22.4
Barge shipments (mil. ton)[3]	2.6	3.0	3.5	4.4	2.3	1.9	3.2	3.6	3.5	3.3
Fresh fruit and vegetable shipments[4]										
Piggy back (mil. cwt)	1.1	0.9	0.7	1.0	0.7	0.7	0.9	0.9	1.1	1.0
Rail (mil. cwt)	1.7	1.2	1.1	1.5	1.3	1.1	1.1	1.0	1.4	2.0
Truck (mil. cwt)	42.6	42.2	44.3	54.4	39.2	37.9	44.4	51.7	59.3	56.5

P= Preliminary. R = Revised. -- = Not available. 1. Department of Labor, Bureau of Labor Statistics. 2. Weekly average; from Association of American Railroads. 3. Shipments on Illinois and Mississippi waterways, U.S. Corps of Engineers. 4. Agricultural Marketing Service, USDA.
Information contact: Jenny Gonzales (202) 694-5296

Indicators of Farm Productivity

Table 38—Indexes of Farm Production, Input Use, & Productivity[1]

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
					1992 = 100					
Farm output	88	83	89	94	94	100	94	107	101	106
All livestock products	92	93	94	95	98	100	100	108	110	109
Meat animals	95	97	97	96	99	100	100	102	103	100
Dairy products	94	96	95	98	98	100	99	114	115	115
Poultry and eggs	81	83	86	92	96	100	104	110	114	119
All crops	86	75	86	92	92	100	90	106	96	103
Feed crops	84	62	85	88	86	100	76	102	83	98
Food crops	84	76	83	107	82	100	96	97	90	93
Oil crops	88	72	88	87	94	100	85	115	99	107
Sugar	95	91	91	92	96	100	95	106	98	94
Cotton and cottonseed	92	96	75	96	109	100	100	122	110	117
Vegetables and melons	90	81	85	93	97	100	97	113	108	112
Fruit and nuts	95	102	98	97	96	100	107	111	102	102
Farm input[1]	101	100	100	101	102	100	101	102	101	100
Farm labor	101	103	104	102	106	100	96	96	92	100
Farm real estate	100	100	102	101	100	100	98	99	98	99
Durable equipment	120	113	108	105	103	100	97	94	92	89
Energy	102	102	101	100	101	100	100	103	109	104
Fertilizer	106	97	94	97	98	100	111	109	85	89
Pesticides	92	79	93	90	100	100	97	103	94	106
Feed, seed, and purchased livestock	97	96	91	99	99	100	101	102	109	95
Inventories	102	98	93	97	100	100	104	99	108	104
Farm output per unit of input	87	83	90	93	92	100	94	105	100	106
Output per unit of labor										
Farm[2]	87	81	86	92	89	100	98	111	110	106
Nonfarm[3]	95	95	96	96	97	100	100	101	--	--

-- = Not available. Values for latest year preliminary. 1. Includes miscellaneous items not shown separately. 2. Source: Economic Research Service.
3. Source: Bureau of Labor Statistics. *Information contact: John Jones (202) 694-5614*

Food Supply & Use

Table 39—Per Capita Consumption of Major Food Commodities[1]

Commodity	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
					Lbs.					
Red meats[2,3,4]	115.6	112.3	111.9	114.0	112.1	114.7	115.1	112.8	111.0	115.6
Beef	65.4	63.9	63.1	62.8	61.5	63.6	64.4	65.0	63.8	64.9
Veal	1.0	0.9	0.8	0.8	0.8	0.8	0.8	1.0	0.9	0.7
Lamb & mutton	1.0	1.0	1.0	1.0	1.0	0.9	0.9	0.8	0.8	0.9
Pork	48.4	46.4	46.9	49.5	48.9	49.5	49.0	45.9	45.5	49.2
Poultry[2,3,4]	53.9	56.3	58.3	60.8	62.5	63.3	62.9	64.1	64.2	65.0
Chicken	40.9	42.4	44.2	46.7	48.5	49.3	48.8	49.5	50.3	50.8
Turkey	13.1	13.8	14.1	14.1	14.0	14.1	14.1	14.6	13.9	14.2
Fish and shellfish[3]	15.6	15.0	14.8	14.7	14.9	15.1	14.9	14.7	14.5	14.8
Eggs[4]	30.5	30.2	30.1	30.3	30.4	30.6	30.2	30.4	30.7	31.8
Dairy products										
Cheese (excluding cottage)[2,5]	23.8	24.6	25.0	26.0	26.2	26.8	27.3	27.7	28.0	28.4
American	11.0	11.1	11.1	11.3	11.4	11.5	11.8	12.0	12.0	12.2
Italian	8.5	9.0	9.4	10.0	9.8	10.3	10.4	10.8	11.0	11.3
Other cheeses[6]	4.3	4.5	4.6	4.7	5.0	5.0	5.0	5.0	5.0	4.8
Cottage cheese	3.6	3.4	3.3	3.1	2.9	2.8	2.7	2.6	2.7	2.7
Beverage milks[2]	224.2	221.8	221.1	218.3	213.4	213.6	209.8	210.0	206.9	204.5
Fluid whole milk[7]	97.5	90.4	87.3	84.0	80.1	78.8	75.3	74.6	72.7	71.6
Fluid lower fat milk[8]	106.5	108.5	109.9	109.3	106.6	106.0	102.6	101.7	99.9	98.5
Fluid skim milk	20.2	22.9	23.9	25.0	26.7	28.8	31.9	33.7	34.3	34.4
Fluid cream products[9]	7.8	7.6	7.7	8.0	8.0	8.1	8.4	8.7	9.0	9.2
Yogurt (excluding frozen)	4.2	4.0	4.2	4.2	4.3	4.7	5.1	4.8	5.2	5.1
Ice cream	16.1	15.8	16.3	16.3	16.1	16.1	15.7	15.9	16.4	16.6
Lowfat ice cream[10]	8.4	7.7	7.4	7.1	6.9	7.6	7.5	7.6	7.9	8.3
Frozen yogurt	2.0	2.8	3.5	3.1	3.5	3.5	3.5	2.6	2.1	1.9
All dairy products, milk equivalent, milkfat basis[11]	563.8	568.4	565.6	565.9	574.1	586.0	583.9	574.7	577.7	582.3
Fats and oils--total fat content	60.5	63.0	64.8	66.8	69.7	68.0	66.4	65.3	64.9	65.3
Butter and margarine (product weight)	14.6	15.3	15.0	15.4	15.8	14.8	13.7	13.5	12.8	12.5
Shortening	21.5	22.2	22.4	22.4	25.1	24.1	22.5	22.3	20.9	20.9
Lard and edible tallow (direct use)	1.8	2.2	1.8	3.5	3.4	4.2	4.4	4.8	4.1	5.2
Salad and cooking oils	24.4	25.3	26.4	27.2	26.9	26.2	26.9	26.2	28.6	27.9
Fruits and vegetables[12]	656.0	656.1	650.3	677.7	691.3	705.8	694.3	710.9	717.9	699.6
Fruit	278.0	272.6	255.3	283.8	283.1	291.0	284.8	290.2	296.8	281.4
Fresh fruits	122.9	116.3	113.0	123.5	124.5	126.3	124.1	128.1	131.9	131.8
Canned fruit	21.2	21.0	19.8	22.9	20.7	21.0	17.5	18.8	20.4	17.3
Dried fruit	13.2	12.1	12.3	10.8	12.6	12.8	12.8	11.3	10.8	12.8
Frozen fruit	4.1	3.8	3.8	3.9	3.7	3.8	4.2	4.0	3.7	4.2
Selected fruit juices	116.4	119.0	106.0	122.1	121.2	126.7	125.8	127.7	129.3	115.0
Vegetables	378.0	383.5	395.0	393.9	408.3	414.7	409.5	420.7	421.1	418.1
Fresh	172.2	167.1	167.4	171.1	178.2	184.6	179.1	184.1	190.4	186.5
Canning	102.4	111.6	114.4	112.2	112.9	112.4	110.8	109.5	107.8	108.0
Freezing	67.4	66.8	72.6	70.9	76.0	78.4	79.9	84.7	81.9	82.3
Dehydrated and chips	29.8	31.0	32.8	31.5	33.6	31.0	31.3	34.5	32.7	32.9
Pulses	6.3	7.1	7.8	8.1	7.7	8.4	8.4	8.0	8.3	8.4
Peanuts (shelled)	7.0	6.0	6.5	6.2	6.1	5.8	5.7	5.7	5.9	5.9
Tree nuts (shelled)	2.2	2.4	2.2	2.2	2.4	2.3	1.9	2.0	2.1	2.3
Flour and cereal products[13]	174.2	181.6	183.0	185.6	189.7	192.4	190.3	196.3	197.6	195.0
Wheat flour	129.7	136.0	137.0	138.9	143.3	144.5	141.8	148.7	149.5	145.9
Rice (milled basis)	14.8	15.8	16.2	16.7	16.7	18.1	18.9	17.8	18.4	18.9
Caloric sweeteners[14]	133.1	136.9	137.9	141.2	144.4	147.3	149.8	150.7	154.0	155.1
Coffee (green bean equiv.)	10.1	10.3	10.3	10.0	9.1	8.2	8.0	8.9	9.3	9.5
Cocoa (chocolate liquor equiv.)	4.0	4.3	4.6	4.6	4.3	3.9	3.6	4.2	4.1	4.4

-- = Not available. 1. In pounds, retail weight unless otherwise stated. Consumption normally represents total supply minus exports, nonfood use, and ending stocks. Calendar-year data, except fresh citrus fruits, peanuts, tree nuts, and rice, which are on crop-year basis. 2. Totals may not add due to rounding. 3. Boneless, trimmed weight. Chicken series revised to exclude amount of ready-to-cook chicken going to pet food as well as some water leakage that occurs when chicken is cut up before packaging. 4. Excludes shipments to the U.S. territories. 5. Whole and part-skim milk cheese. Natural equivalent of cheese and cheese products. 6. Includes Swiss, Brick, Muenster, cream, Neufchatel, Blue, Gorgonzola, Edam, and Gouda. 7. Plain and flavored. 8. Plain and flavored, and buttermilk. 9. Heavy cream, light cream, half and half, eggnog, sour cream, and dip. 10. Formerly known as ice milk. 11. Includes condensed and evaporated milk and dry milk products. 12. Farm weight. 13. Includes rye, corn, oats, and barley products. Excludes quantities used in alcoholic beverages, corn sweeteners, and fuel. 14. Dry weight equivalent.

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